MAY, 1932

# COTTON

*Serving the*
TEXTILE INDUSTRIES

THE BEDAUX PRINCIPLE DEALS WITH THE HUMAN ELEMENT ALONE

## 60 B-Hour--

THIS is probably Greek to you but to 632 important plants (including textile) it is the yard stick by which they measure their effectiveness and the means by which they have

**Decreased their manufacturing cost $54,000,000**

**. . . and increased wages paid $32,000,000**

Is Bedaux going to remain a mystery to you or will you write us for a list of our clients so that they may tell you what it has done for them?

A copy of our booklet "Bedaux Measures Labor" will be sent on request.

THE CHAS. E. BEDAUX COMPANY
OF NEW YORK, INC.

DOUGLAS S. KEOGH, *President*
J. J. SKELLY, *Gen. Mgr.*
22 East 40th St., New York City

H. B. CRAFT, *Vice-President*,
In charge of Southern Operations
30 Camden Road, Atlanta, Ga.

THE BEDAUX PRINCIPLE DEALS WITH THE HUMAN ELEMENT ALONE

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# PROTECTION

## *with* CONVENIENCE *and* ECONOMY

KAUMAGRAPH *becomes exclusive distributor for*

*Berks Electric Transfer Iron*

SINCE 80% of all dry transfers used in the United States are K. D. T.'s, it is logical that Kaumagraph has been made exclusive distributor for the Berks Electric Transfer Iron. Made by the Berks Engineering Company, of Reading, Pa., it is a scientific product, but simple in operation. Over 5000 in regular use, it speeds up the marking with K. D. T.'s and cuts costs. Now, when production expense must be kept low to help profits, is the time to replace old, heavy, antiquated irons that slow up marking and are costly to operate. Plugged in on any circuit, the Berks iron uses only 100 watts; heating element guaranteed for three years; cool handle; detachable cord, iron surface 2 x 3⅛ inches; carried in stock for 110 or 220 volts; special voltages made on order; nothing to get out of order. Price, only $10.00 each, net. Order one for every transfer operator in your mill today.

**KAUMAGRAPH COMPANY**
200 VARICK STREET, NEW YORK CITY

CHICAGO — PHILADELPHIA — LOS ANGELES
CHARLOTTE, N. C. — PARIS, ONT. — PARIS, FRANCE
CHATTANOOGA, TENN. — MANCHESTER, ENGLAND

Copyright 1932 by Kaumagraph Co.

**30 DAY FREE TRIAL OFFER**

You may order a Berks Transfer Iron on trial with the understanding that it will be returned or paid for within thirty days. In ordering be sure to specify voltage.

If you order new Transfer Irons for replacement we will allow you $2.00 for each old-type iron returned.

**ALLOWANCE ON OLD IRONS**

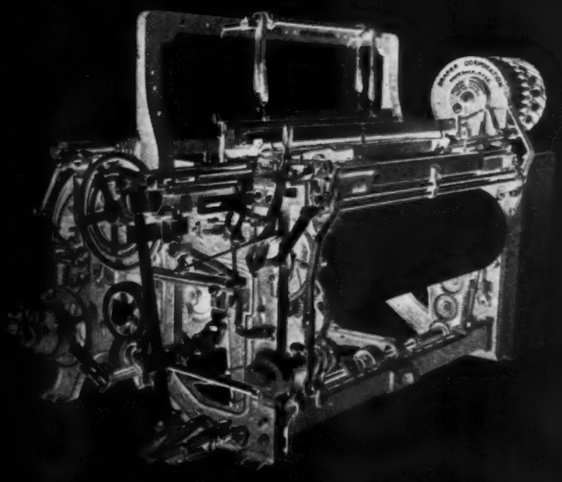
COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign countries, $2.00 per year. Entered second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

# A Loom That is Different

Our New X Model High Speed Northrop Loom

A NEW LIGHT ON WEAVING

It Was NOT Built by Adding Something Better to What Was



It WAS Built New from the Ground up A Triumph of Modern Loom Engineers

## Why It Is Different

It Runs Faster—Which Means at least 20 Per Cent More Cloth

It Runs Better—Like the latest auto it is the Product of Modern Engineering—It is Built to meet Today's Weaving Problems

It Stops and Starts with a Precision that Makes the Weaver's Work Easy

Requires Less Attention from the Fixer—It has parts that Wear Longer

## There is Nothing Like It—Nothing Else That Will Save So Much Money in the Weave Room

## DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

# Abbott Circulating Winder

800 YARDS PER MINUTE WINDING SPEED

550 TO 650 NET BOBBINS PER HOUR PER OPERATIVE AVERAGED THROUGHOUT THE WEEK

WINDS CHEESES OR CONES FROM WARP OR FILLING WOUND BOBBINS....

COUNTS — 1s TO 100s.....

LOW COST PER SPINDLE.....

These features will give a lower winding cost than any other type of winder or spooler.

## ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Agent: A. S. THOMAS, Greenville, S. C.

# BUTTERWORTH *announces . .*

## the ULTRA Package and Beam Dyeing Machine

which now makes possible the dyeing of packages and beams from the inside to the outside, or the outside to the inside

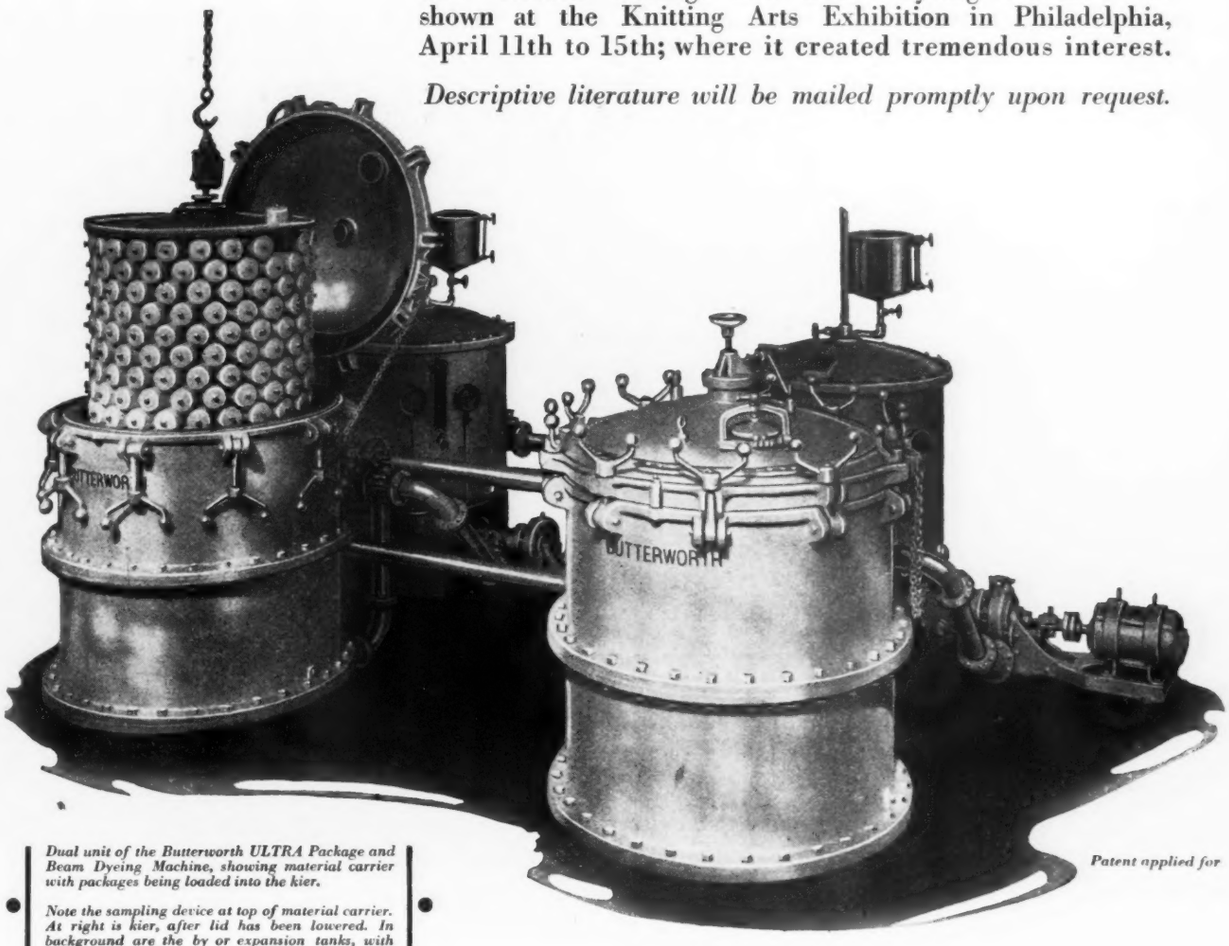
*—Greater and quicker penetration*

*—More even flow of dye liquor*

are but two of sixteen advantages of this new machine.

The ULTRA Package and Beam Dyeing Machine was shown at the Knitting Arts Exhibition in Philadelphia, April 11th to 15th; where it created tremendous interest.

*Descriptive literature will be mailed promptly upon request.*




*Dual unit of the Butterworth ULTRA Package and Beam Dyeing Machine, showing material carrier with packages being loaded into the kier.*

*Note the sampling device at top of material carrier. At right is kier, after lid has been lowered. In background are the by or expansion tanks, with feed-on kettles above.*

*Patent applied for*

**H. W. BUTTERWORTH & SONS COMPANY,** *Established 1820*

PHILADELPHIA, PA.

PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

*New England Office:* TURKS HEAD BUILDING, Providence, R. I.

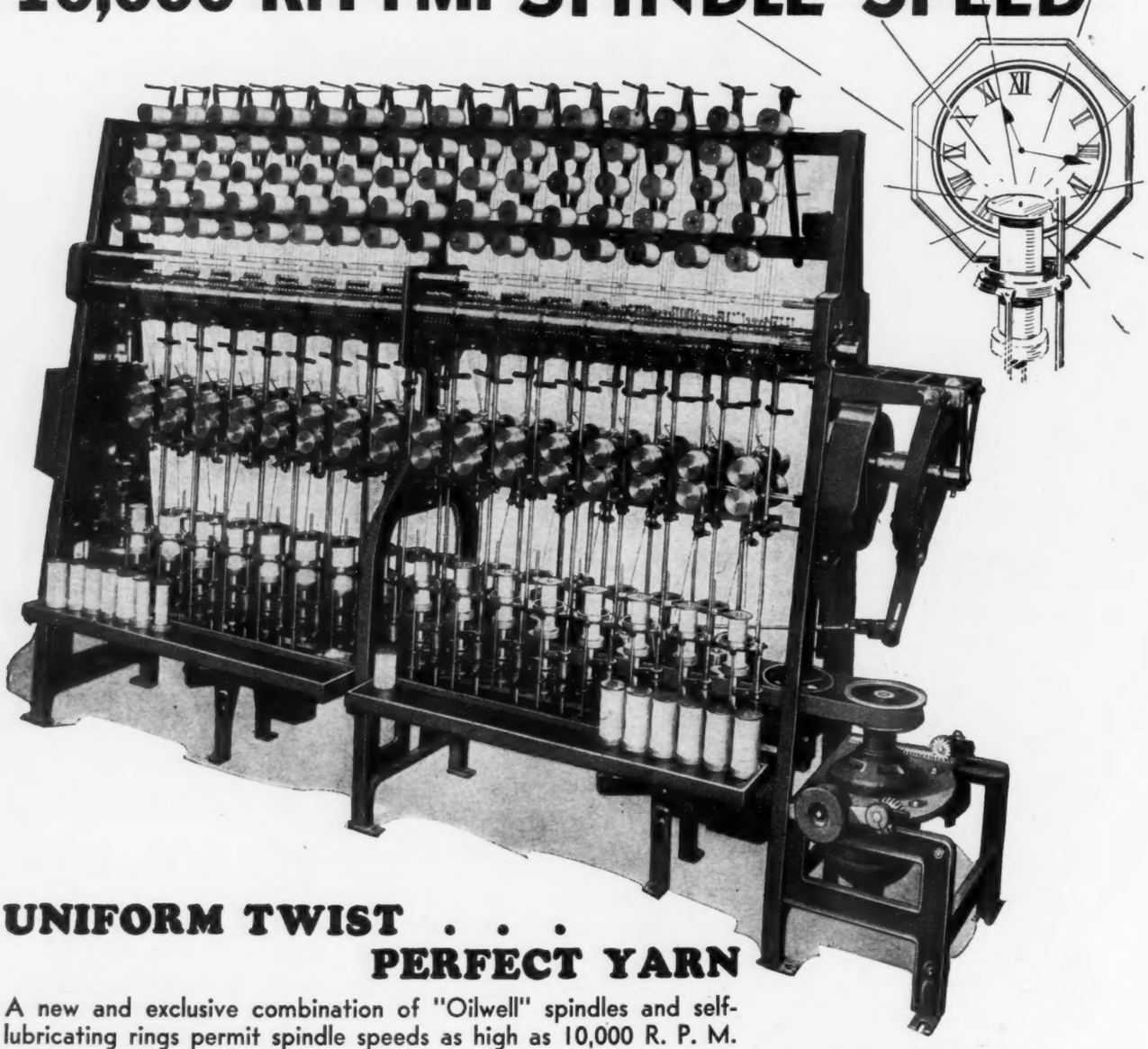
*Southern Office:* JOHNSTON BUILDING, Charlotte, N. C.

*In Canada:* W. J. WESTAWAY CO., Hamilton, Ontario

# BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY . . . . . .

# 10,000 R. P. M. SPINDLE SPEED



## UNIFORM TWIST . . . PERFECT YARN

A new and exclusive combination of "Oilwell" spindles and self-lubricating rings permit spindle speeds as high as 10,000 R. P. M. on high twist tram.

Tests made by throwsters have proven the twist to be absolutely uniform, and the yarn is not stretched or harmed in any way.

"Oilwell" spindles, with their extra large reservoirs of cool clean oil, run at full speed always. Large double feed-rolls provide an unvarying travel of yarn to the spindle.

The net result of these exclusive Fletcher features is high speed production with 100% satisfaction.

**FLETCHER DUPLEX DOUBLER-TWISTER**

SEND FOR NEW BULLETIN No. 39

# FLETCHER

THROWING MACHINERY FOR SILK AND RAYON - - CENTRIFUGAL EXTRACTORS - - NARROW FABRIC LOOMS

FLETCHER WORKS · GLENWOOD AVENUE AND SECOND STREET · PHILADELPHIA

FORMERLY SCHAUM AND UHLINGER - ESTABLISHED 1850

# THE G-E THRUSTOR

## WHAT IT IS,

## AND HOW IT REDUCES EFFORT AND COSTS

## POINT THE WAY TO NEW SAVINGS

THE new G-E Thrustor—a self-contained motor-driven device for producing a smooth, powerful thrust with cushioned return. In general it will replace levers, solenoids, air cylinders, hydraulic cylinders, pedals—do a better job and give you savings in time, labor, and money.

You will find that the Thrustor has many applications in the textile industries. For example it can be used to advantage and with increased efficiency on valves, gates, bailers, doors, conveyors, brakes, and dozens of similar applications; your operating department should have complete information.

MAIL COUPON FOR YOUR COPY

Address your nearest G-E office or GENERAL ELECTRIC COMPANY, Industrial Dept., 1 River Road, Schenectady, N. Y.

Please send me a copy of your new THRUSTOR bulletin.

Name.....

Position.....

Company.....

Address.....

301-98B

# GENERAL ELECTRIC

# EFFICIENCY

## Means Getting The Most Done With The Least Effort

Moving picker laps by hand from a breaker to an intermediate, and from the intermediate to the finisher is a fine example of *inefficiency*. Cut out the intermediate and it helps some, but is still wasteful of effort, and effort costs money.

Spending thousands of dollars for efficient opening machinery, and then winding the cotton up into as tight a lap as possible, is a wasteful and harmful practice. It wastes power, and damages the cotton.

Combining all pickers into a continuous machine, which takes loose cotton in one end and turns finished laps out of the other is the efficient way.

Reducing costs often means simply lowering quality, which is generally foolish; but if costs can be reduced by changing machines to make them do their work in a different and better way, it is more foolish not to do it.

Pickers combined by the Aldrich Synchronized Single Process method do better work, and do it cheaper; enough cheaper to pay for the change in from six to eighteen months. This is not merely a statement, but a fact which can easily be verified by asking those who have made the change. Over 200 installations are paying nearly 100% on the investment, with savings ranging from 50% to 200%.

AldricH MachinE

Greenwood, WorkS South Carolina

## Starting or Running TEXROPE DRIVES perform . . . . .

with a smoothness that is difficult to obtain in other types of drives. Scientifically produced belts, accurately machined sheaves and correctly designed drives are responsible for the smooth operation found only in genuine Texrope Drives. Remember these facts when you are in need of drives for Twisters, Spinning Frames, Quillers, Sliver Laps, Gassing Machines, Warpers, Winders, Cards, Slubbers, Roving and Drawing Frames. May we send you a copy of Textile Folder No. 2126 or make recommendations for your requirements? . . . . . *Write to Allis-Chalmers Mfg. Co., Milwaukee, Wis.*

ORIGINATED BY ALLIS-CHALMERS

**TEXROPE DRIVES**

**ES THAT REVOLUTIONIZED TRANSMISSION PRACTICE • • •**

# IDEAL PRODUCTION

## the idea behind Tuffer Card Clothing

THROUGHOUT every step in its manufacture Tuffer Card Clothing is made with one idea kept constantly in mind .... ideal production for the ultimate user.

Tuffer Card Clothing is ideal production equipment .... the result of 65 years' experience—all of it paving the way towards better and more economical production..

Today Tuffer Card Clothing gives the maximum in longevity and service. It gives many more pounds of production and saves considerably on stock here-to-fore wasted.

To prove conclusively to you the superiority of Howard Brothers Card Clothing, we are always quite willing to subject it to practical tests, right in your own plant. Satisfactory and economical performance on the part of our products has always been our best sales argument.

Consult a Howard Brothers card clothing expert.

## HOWARD BROS. MANUFACTURING CO.

HOME OFFICE and FACTORY: WORCESTER, MASS.

*Southern Plant*

244 FORSYTH ST., ATLANTA, GA.

*Branch Offices*

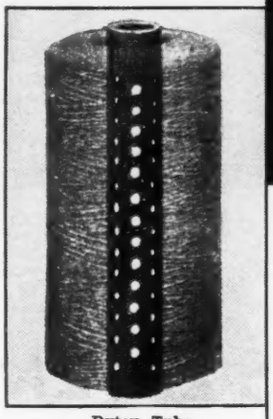
PHILADELPHIA — DALLAS — WASHINGTON

TRADE MARK TUFFER REG. U.S. PAT. OFF.

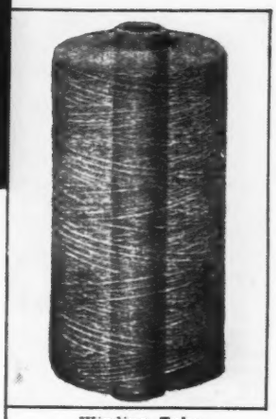
CARD CLOTHING

# THE "BEST" IS ALWAYS THE "BARGAIN" IN CONES

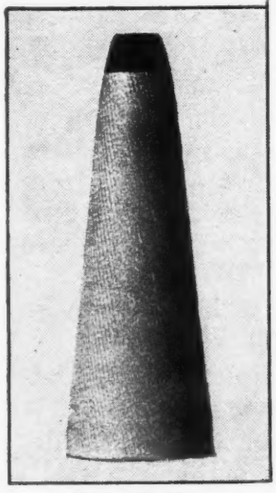
Jumbo Cone



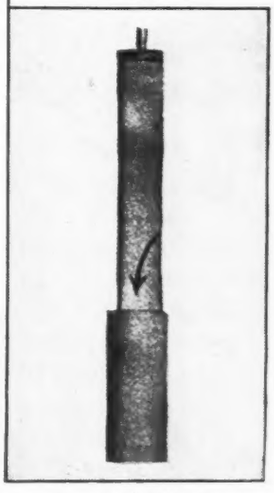
Dytex Tube



Winding Tube



Velvet Surface Cone



Underclearer Roll

IN any business there is always one company exercising more care than the others in maintaining a definite standard in their products.

These products at the right price are bargains—they cost you less in the long run than inferior low priced types.

When you buy cones, tubes or rolls the profitable plan is to choose the "standard". You will be sure of getting a bargain, for the price will be commensurate with the quality of the product.

Sonoco Cones, Tubes and Rolls are standard products throughout the textile industry. They are reasonably priced—costing no more than many of the ordinary products. Then why not get the most for your money by always specifying Sonoco?

Write for samples at our nearest representative's.

## "SONOCO"

## CONES - TUBES - ROLLS

Mexican Representative:
Compania de Industria y Comercio, S. A.
Ave. Isabel La Catolica, 59
Mexico D. F., Mexico

Canadian Representative:
W. J. Westaway Co., Ltd.
Hamilton, Ont.

English Representative:
Textile Paper Tube Co., Ltd.
Romiley, Nr. Stockport, Eng.

## SONOCO PRODUCTS COMPANY
## HARTSVILLE, S. C.

MANUFACTURER

CONES, TUBES, CLOTH-WINDING CORES AND SPOOLS,

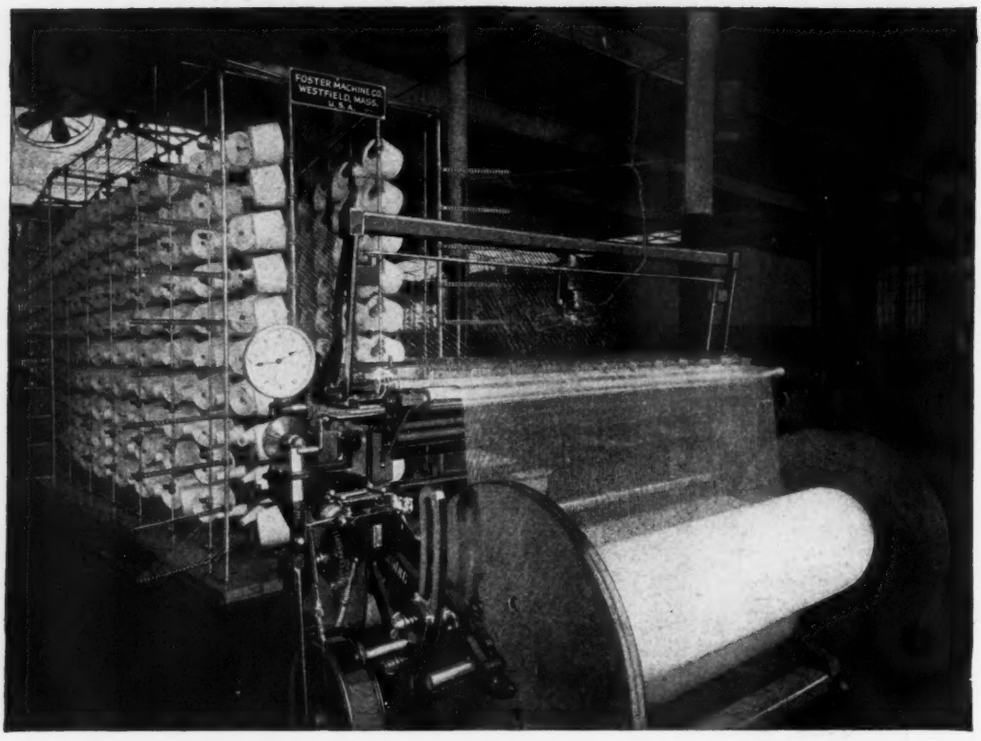
**Velvet Surface Cones, Underclearer Rolls, Dytex Tubes, Etc.**

**Mills: Hartsville, S. C., Rockingham, N. C. and 709 W. Front St., Plainfield, N. J.**
**New England Office: 512 Book Store Bldg., New Bedford, Mass.**

Spanish Representatives:
Sobre y Cia, S. L.
Fernandina No. 22
Barcelona, Spain

China Representatives:
Anderson, Meyer & Co., Ltd.
4, 5, 8 Yuen Ming Yuen Road
Shanghai, China

Australian Representatives:
Frank Lee & Co. Pty., Ltd.
Melbourne, and Sydney




# Foster
## CONE WARPING SYSTEM

The following points of superiority of the Foster Cone Warping System have been demonstrated under competitive conditions.

In the Cone Winding Process using the Foster Model 102 Winder—more pounds produced by the operative with the resulting lower winding costs per pound of yarn.

Economy in Floor Space—the highest possible winding speed considering delicate yarn conditions.

Sturdy machine design and construction—minimum cost for replacements.

Operating Conditions—end piecing movements reduced promoting efficiency and preventing operative fatigue.

In the Warping Process using the Foster Magazine Cone Creel—free drawing from the cone with exact even tensioning of each strand, eliminating tight and loose warp ends.

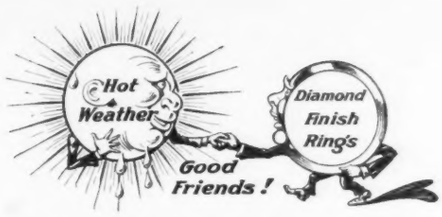
High Warping Speed without Stoppage for recreeling.

Each cone empties completely, eliminating stale yarn and waste.

Cones hold up to 4½ pounds of yarn (depending on the density of the material). This is an important item in lowering warping costs.

*The Foster Cone Warping System is in operation in Cotton, Worsted, and Woolen Yarn and Weaving Mills.*

## FOSTER MACHINE COMPANY
### WESTFIELD, MASS.




## DIAMOND FINISH Rings
### *start easily in summer*

Last year a bigger percentage of our business came in the hot months than in any previous year. In other words, more and more mills are changing rings in summer. With the adequate humidity control in today's mills and with the new high polish finish and protective oil coating on DIAMOND FINISH Rings, there is absolutely NO disadvantage to starting your rings in the summer months. But there IS a disadvantage in delaying if you need them now —isn't that true?

*Free samples upon request*

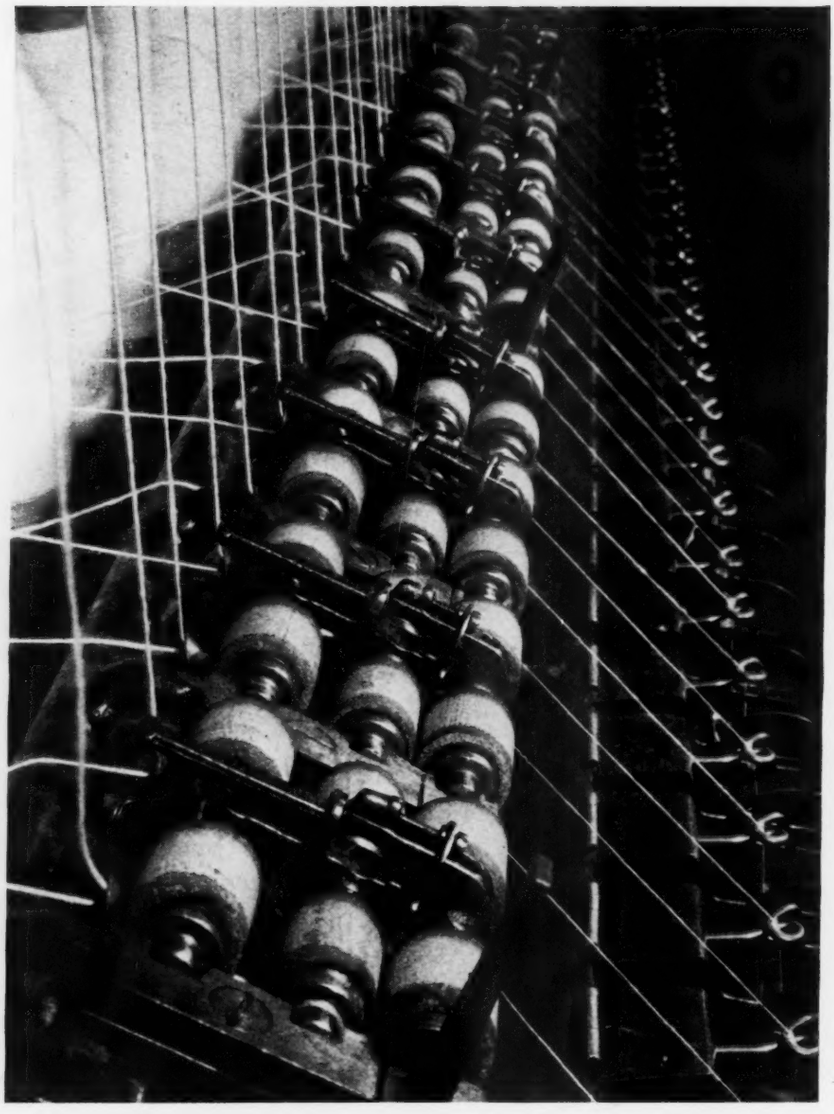
# Whitinsville (Mass.)
# SPINNING RING CO.

*Devoted to making "DIAMOND FINISH" Spinning and Twister Rings since*

# 1873

## MILL AFTER MILL REPORTS ITS

# ROLL COST CUT 60%



SOME say more. Some less. But on the average, 60% is the saving that mills report with Armstrong's Seamless Cork Cots. Time after time, under conditions of all sorts, these figures have been definitely proved in actual cost studies conducted by mills spinning numbers all the way from 2s to 120s.

Already over 5,000,000 spindles are covered with Armstrong's Seamless Cork Cots. More than 90 mills, whose total spindlage is over 25% of the industry's total, are changing over to seamless cork as fast as replacements permit.

Why? Armstrong's Seamless Cork Cots last *four times as long* as ordinary roll coverings. These huge savings are accompanied by improved running conditions and high quality yarn. Cork rolls are less affected by changing humidity conditions. Clearer waste is noticeably decreased. Less trouble with lap-ups and hard ends.

### Send for *free* book of mill data

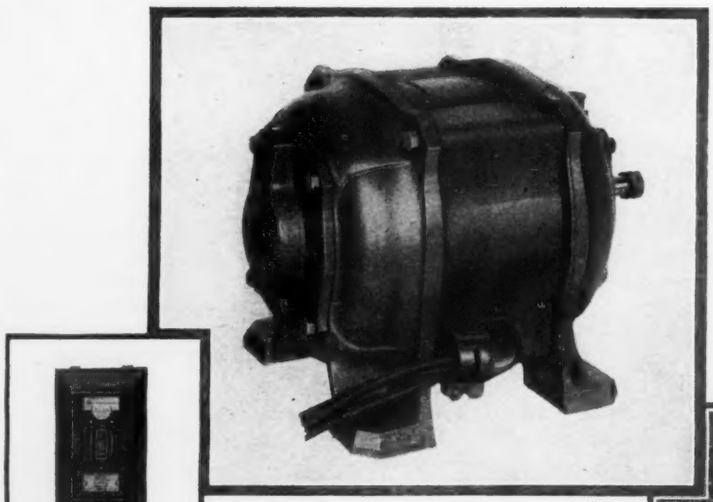
Get the complete story. Send for the new, free book: "The Facts about Armstrong's Seamless Cork Cots," showing cost studies based on actual mill records . . . expert analysis from independent sources . . . full details on all the advantages of Armstrong's Seamless Cork Cots. For your copy, address Armstrong Cork Company, 923 Arch St., Lancaster, Pennsylvania.

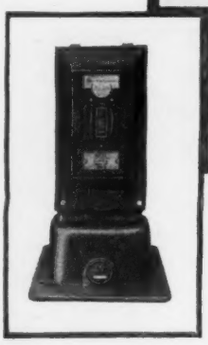
*Armstrong's* (A) *Product*

# *Armstrong's* SEAMLESS *Cork Cots*

*For Spinning and Card Room Rolls*

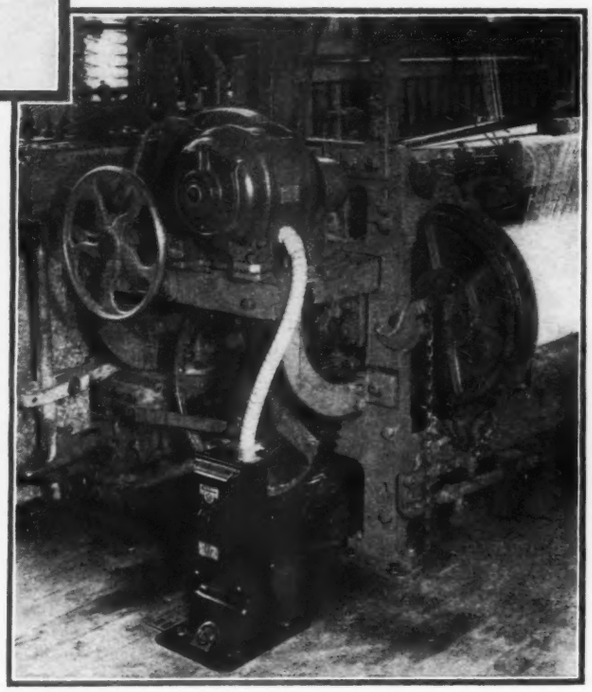
# MADE TO ORDER for Loom Drive





*Above—The Westinghouse Loom Motor, showing the vibration-proof squeeze connector for flexible conduit.*

*Left—The WK-16 Loom Starter mounted on a single pedestal. Note how handle is guarded against accidental operation.*



*More than 600 Westinghouse Loom Drives are installed in this North Carolina mill. Note its compactness and sturdy appearance.*

TWO short years ago the Westinghouse Loom Drive, Motor and WK-16 Starter, was new. Today it is found on thousands of looms—it has passed all tests with flying colors.

The many improvements over previous loom drives were so obvious and practical that the textile industry's acceptance came readily.

## STURDY MOTOR

The motor has great mechanical strength to withstand shocks and vibration. It's high efficiency and power factor assure minimum power costs. The overload capacity is generous to bridge the "breaking-in" period of new looms.

## SERVICE-TESTED STARTER

The starter is moisture-resisting and unaffected by dust and lint. Positive overload protection is afforded by the reliable and time-tested built-in Watchman thermostat, eliminating fuses and links. The Watchman is small and compact, permitting ample room for wiring.

There are other features of Westinghouse Loom Drive that assure low installation, operation, and maintenance costs. Write our nearest district office for a copy of Leaflet 1289-A, or mail the coupon.

**Westinghouse**

T 79069

*Quality workmanship guarantees every Westinghouse product*

**SEND FOR BOOKLET**

Westinghouse Electric & Manufacturing Company
Room 2-N—East Pittsburgh, Pa.

Gentlemen: Please send me a copy of L. 1289-A, Loom Motors and Control.

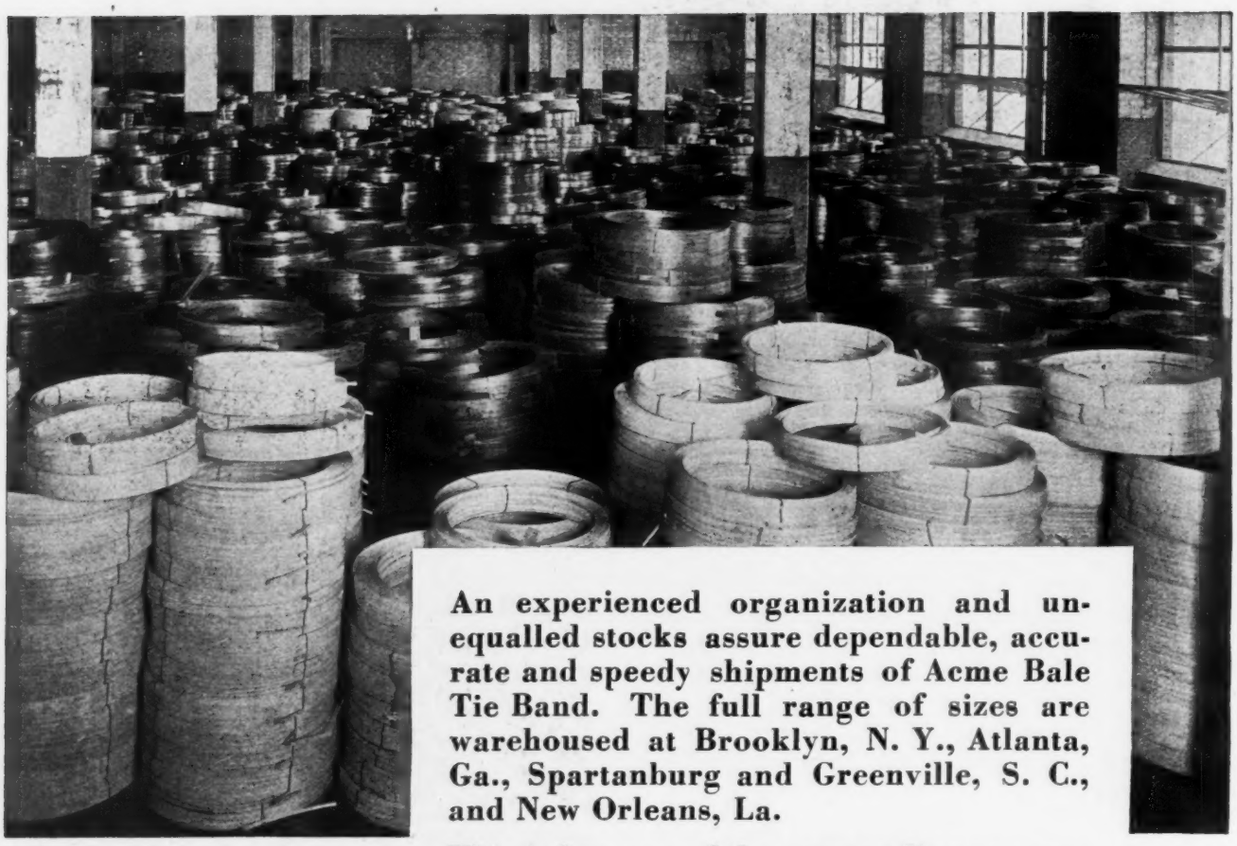
*Name* .....

*Company* .....

*Address* .....

*City* ..... *State* ..... C 5-32

# Quick Deliveries
## for users of
# Acme Bale Tie Band



**An experienced organization and unequalled stocks assure dependable, accurate and speedy shipments of Acme Bale Tie Band. The full range of sizes are warehoused at Brooklyn, N. Y., Atlanta, Ga., Spartanburg and Greenville, S. C., and New Orleans, La.**

**This is but one of the outstanding reasons why most textile mills use Acme Band.**

**Acme Bale Tie Band has four advantages--true temper, maximum strength, clean, rust-resisting finish and smooth, burrless edges.**

**Give Acme Band any test you like and compare it with any other band you may choose. Acme Band in your plant will insure steady production and maximum security to bales.**

## ACME STEEL COMPANY

General Offices: 2832-40 Archer Ave., Chicago SAVE WITH STEEL *Branches and Sales Offices in Principal Cities*

BROOKLYN, N. Y., 219 36th St. ATLANTA, GA., 603 Stewart Ave., S.W. NEW ORLEANS, Masonic Temple Bldg.

# THERE'S A "BLUE STOCKING"

## IN THIS

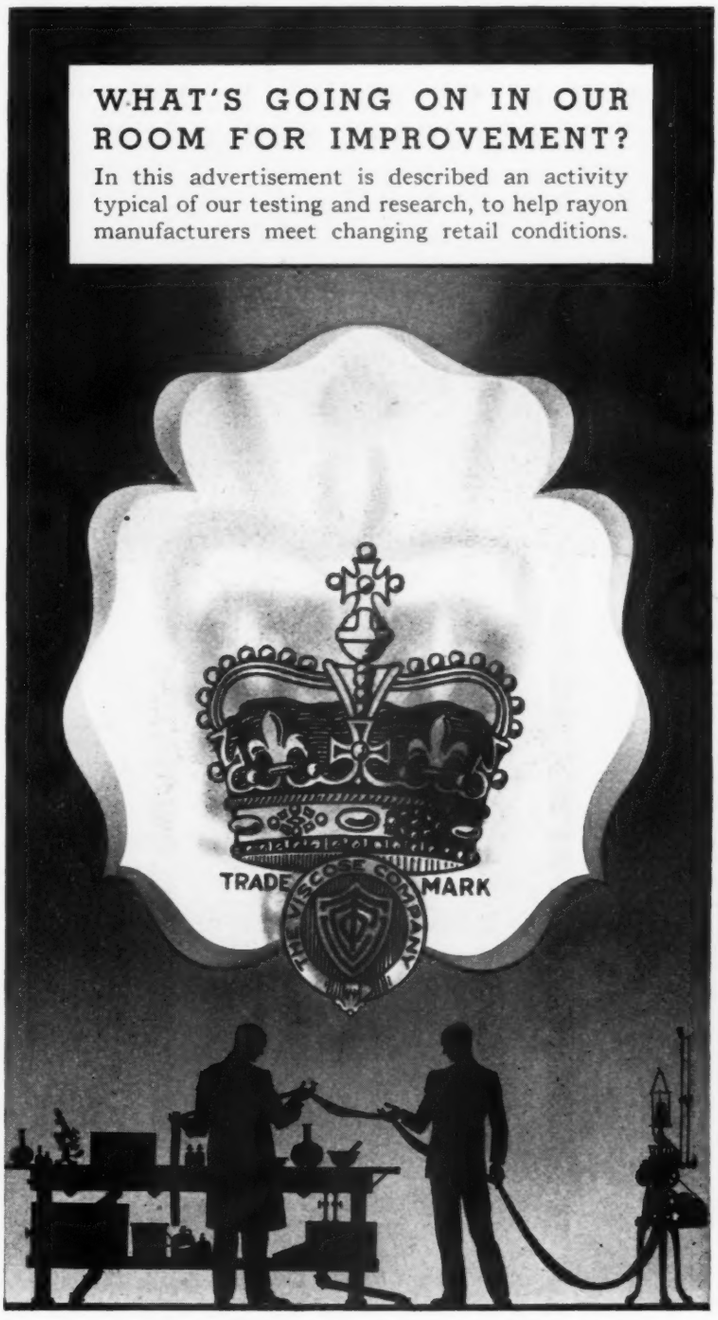
# BUSINESS

•

and it's 30 feet long. It's knit of a dozen kinds of yarn . . . a different kind, in fact, for every two feet of "stocking." • Then it's dyed a shade of blue that most readily shows up defects, and we test the whole knit tube from end to end. • Slippage . . . wet and dry bursting strength . . . color-fastness . . . stretch or shrinkage. We watch what happens to each type of yarn under all these conditions. We know how Crown Brand will behave in your hands . . . on the retailer's counter . . . in the customer's daily service. And Crown Rayon Yarns usually accomplish much more than you ever expect of them!

THE VISCOSE COMPANY

200 Madison Avenue New York City

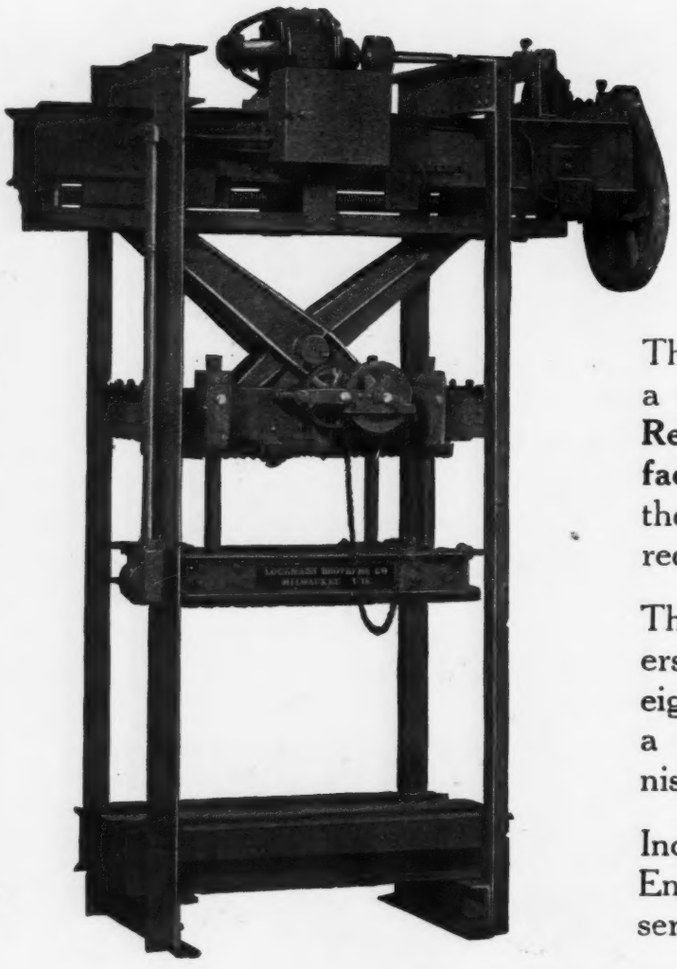

WHAT'S GOING ON IN OUR ROOM FOR IMPROVEMENT?
In this advertisement is described an activity typical of our testing and research, to help rayon manufacturers meet changing retail conditions.
TRADE
MARK
THE VISCOSE COMPANY

# CROWN RAYON YARN

# LOGEMANN

Hand-Belt-Electric-Hydraulic

## *Baling — Presses*



**USED FOR MANY YEARS IN HUNDREDS OF TEXTILE MILLS THROUGHOUT THE COUNTRY**

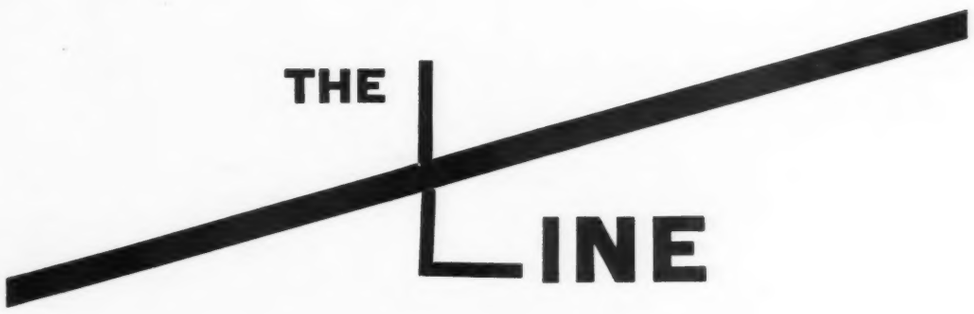
These balers have established a reputation for **Economy, Reliability** and **General Satisfaction** that is best indicated by the numerous repeat-orders we receive continually.

The LOGEMANN line of balers consists of more than eighty types and capacities and a suitable press can be furnished for any purpose.

Inquiries are solicited and our Engineering Staff is at your service.

## LOGEMANN BROTHERS CO.

*3102 Burleigh St., Milwaukee, Wis.*




# is UPward Bound in GEORGIA TEXTILES

There are sound reasons why Georgia leads, why her cotton mills gain spindles and looms during a depression, why her raw materials are steadily gaining wider markets as such, and are being converted more and more into finished products right at home. Outstanding among those reasons is the type of labor which Georgia offers.

Fair-minded, straight-thinking, eager—the workers of Georgia weld her resources and advantages into a productive tool which creates profit for themselves and those whose investments make production possible.

**1931 Records**

**In the cotton mills of Southern states, spindles increased 139,076 during 1931. Of this sound growth, Georgia had**

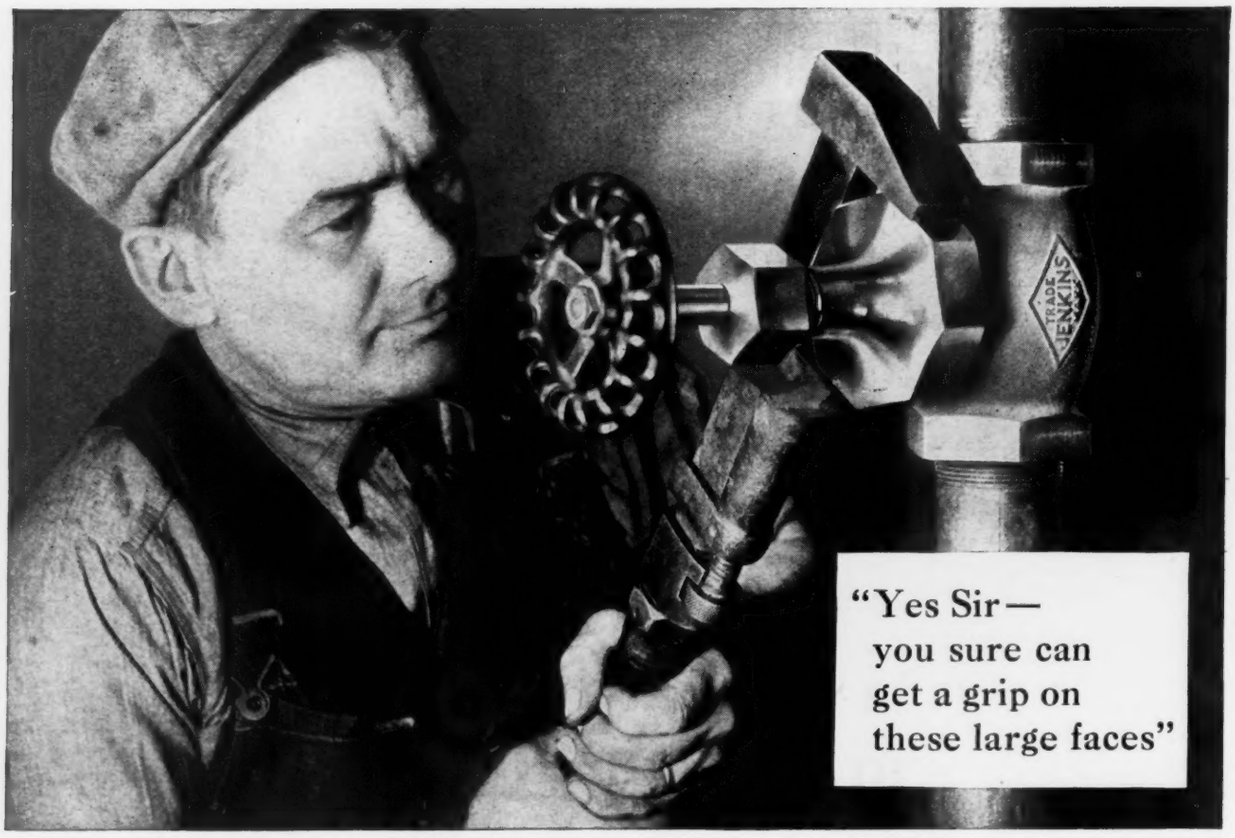
**59%**

**In the same states, cotton looms made an increase of 5,176 and of this total, Georgia's figure was over**

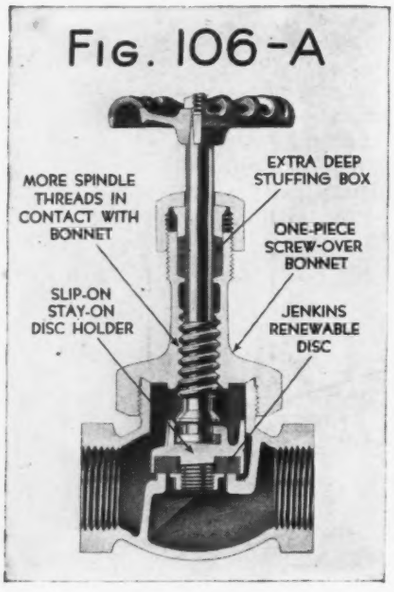
**40%**

This Company has made extensive and thorough studies of conditions affecting industrial opportunities in Georgia, and this information is at the disposal of all who would know the profit-facts about our state, without cost or obligation. Simply drop a line to Industrial Department, Georgia Power Company, Atlanta, or care of Commonwealth & Southern Corporation at 20 Pine Street, New York.

GEORGIA POWER COMPANY




# This VALVE *saves your time* your company's money




JUST look at the size of those bonnet faces that afford a good grip for the wrench, making removal easy, quick, safe. Then there's the time and temper-saving slip-on stay-on disc holder that speeds up disc replacement. These are among the time and money-saving features found throughout the Fig. 106-A Jenkins Bronze Globe Valve.

The husky screw-over bonnet assures strength and endurance in this valve. It's cast in a single solid piece and won't spring or distort when repeatedly removed and replaced.

The cut-away view shows these and other typical features that make Fig. 106-A the truly money-saving valve. For further facts write for Form 141, or consult your supply house. This valve is made in globe, angle, cross and check patterns.

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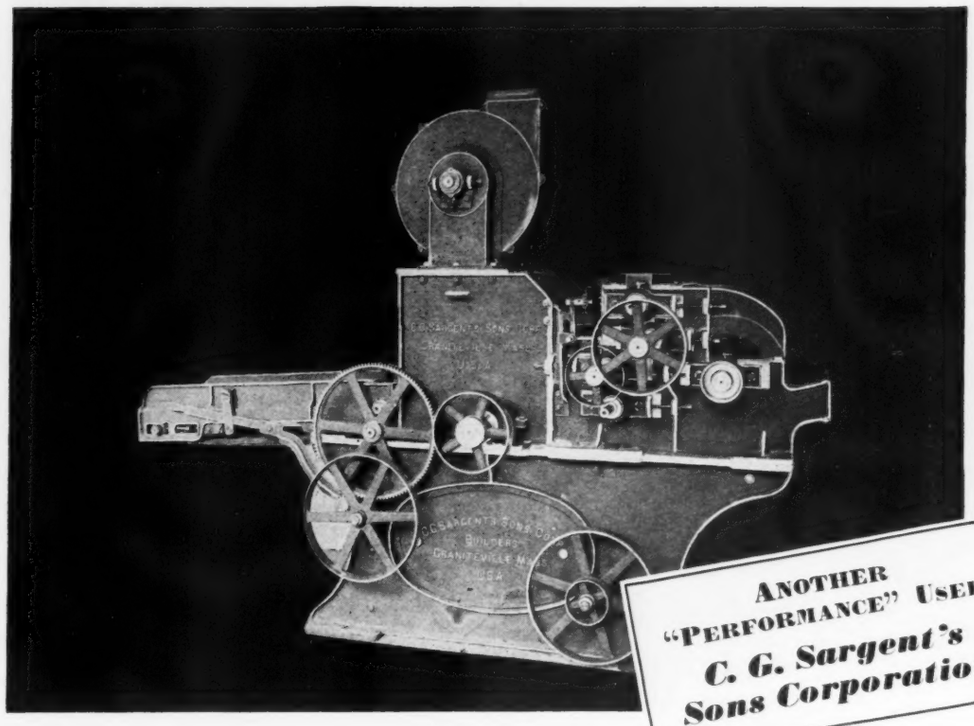


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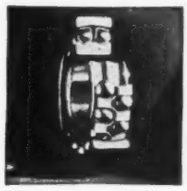
HIGH SPEED... low speed, from 4 to 1800 R. P. M., and smooth bearing performance always, for *all the bearings* on this Sargent Burr Picker are ... SKF. Such dependability is an important factor in any mill where a minimum of maintenance, low operating costs and quality output are desired. It is the reason why SKF Performance Takes Preference Over Price on this equipment.

SKF Ball Bearings run easily and without any apparent effort for friction is practically eliminated. More than this, no bearing adjustments are needed. Therefore, settings are constantly maintained, resulting in longer life of gears and improved quality of production. With sealed housings retaining lubricant for long periods, replenishment is infrequent, leakage banished, a clean machine is assured and the danger of spoiled product reduced.



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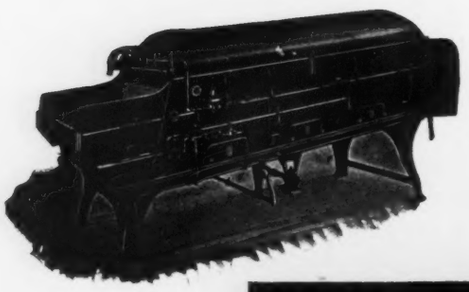

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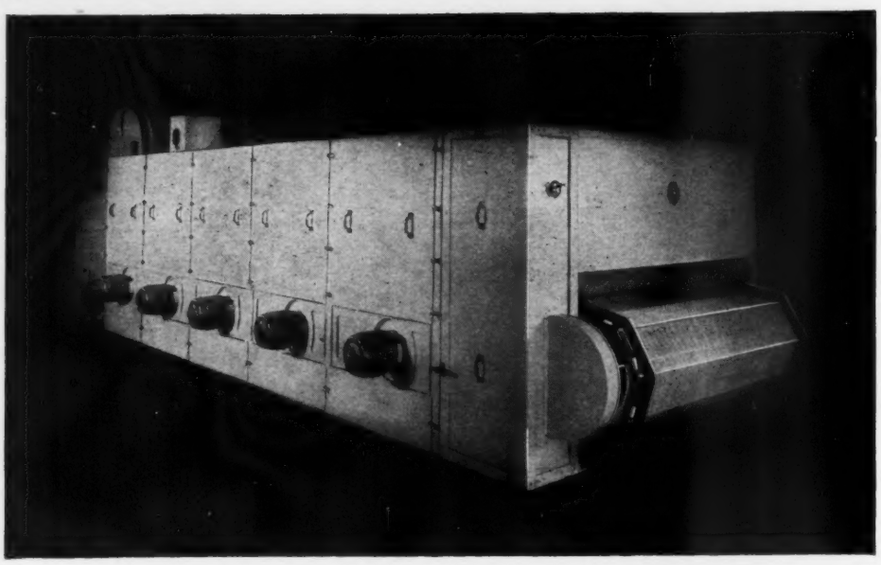
*From this machine the filling can go to the looms in one half hour. Automatic in operation this machine conditions every batch evenly and uniformly.*



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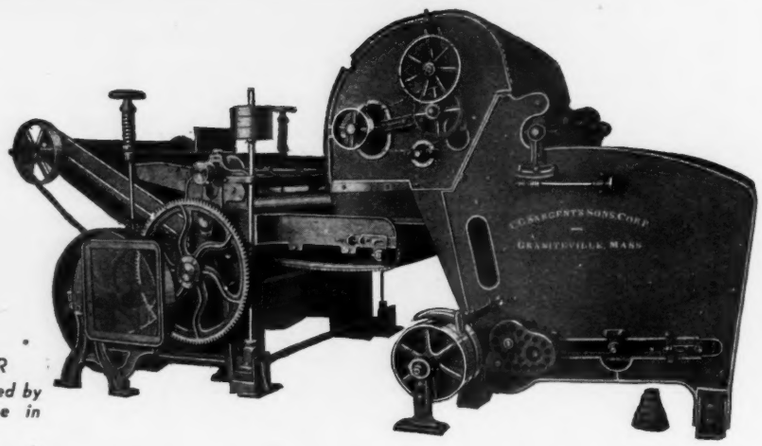

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The useful and beautiful creations of the textile chemists and colorists are achieved only in harmony with nature's laws. They know that the mixture of good fabrics with bad chemical compounds can not achieve a good result.

This same conviction has been a law and a settled tradition in this organization for more than thirty years.

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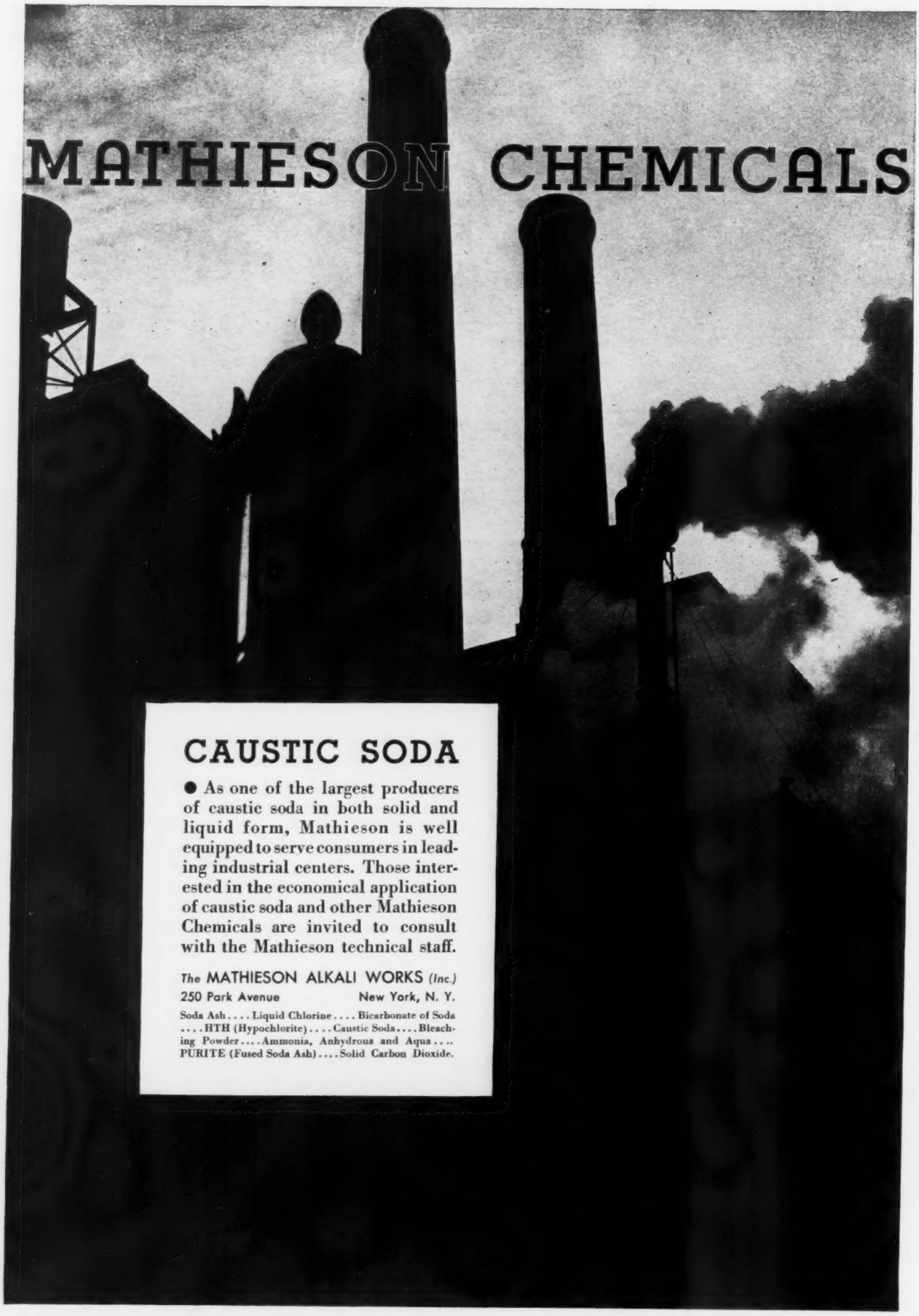


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The Lowe Manufacturing Company,
Huntsville, Alabama.
Shelbyville Mills, Inc.,
Shelbyville, Tenn.

"I HAVE been a reader of COTTON for a number of years and find it the most interesting and helpful journal that I take. I never fail to get new ideas, that are beneficial to me, in every issue."

J. W. McElhannon

# Every Department Producing a Profit

Never have conditions so completely justified the investigation of every mill operation . . . it is of importance to stop even small wastes. Relocation and better grouping of machinery will speed up smooth production and substantially cut operating costs —and may not require the purchase of a single new machine!

Many textile executives, with foresight and initiative, are choosing TODAY as the time to work out plans to meet the strenuous competition existent under present conditions. These plans all work toward greater efficiency in your mill, a greater saving in operating cost—and the consequent ability to meet competitors' prices.

Our organization, with a staff of experienced engineers—mechanical, electrical, civil, and textile—is prepared to take your problems, study each aspect, and work out a comprehensive plan for competitive efficiency.

We will be glad to study this problem with you . . . preliminary consultation is entirely without obligation.

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ATLANTA INCORPORATED GEORGIA
*Architects and Engineers*

Vol. 96 **COTTON** No. 5

May, 1932

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director

ROBERT W. PHILIP, Editor

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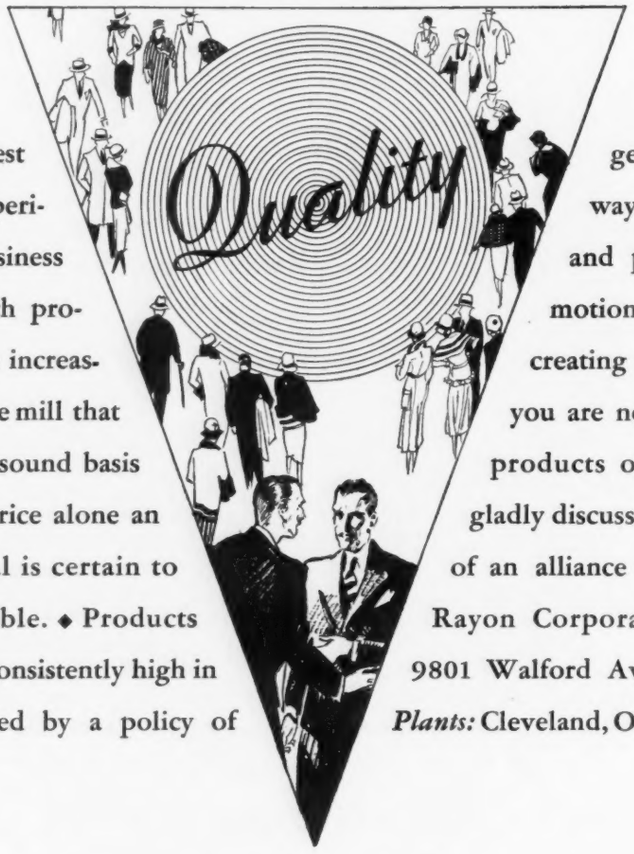
# *In Times Like These*

# AN ALLIANCE WITH INDUSTRIAL

# *is of Greater Value than ever . . .*

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# COTTON

Vol. 96 May, 1932 No. 5


# American Meeting in Atlanta

THE thirty-sixth annual convention of the American Cotton Manufacturers Association to be held at the Atlanta Biltmore Hotel in Atlanta, Ga., on May 20th and 21st, will have perhaps the largest attendance of any of the meetings in recent years.

President Cason J. Callaway . .

This statement is made because of the fact that during the past few years, and particularly during the past year, the southern cotton-textile manufacturers have realized that common problems must be worked out in community co-operation. Again, the spindles in the southern area have grown sufficiently large in numbers, and sufficiently important in the kind and quantity of products made, that the policies of the southern manufacturers are the influential factors in the industry in its nation-wide scope.

President Cason J. Callaway has been extremely active both in personal visits and conferences, and in extensive correspondence, in his efforts to improve the textile situation during the past year. These efforts have not only been of value to the mill members, and appreciated by them, but they have also created a stronger confidence and belief in associational activities.

One of the feature addresses at each annual meeting is the one delivered by the president, and Mr. Callaway, who is regarded as one of the South's outstanding manufacturers, has had an experience in assisting in the directing of the policies during the past year which will have given him an experience that will make his address this year of unusual interest.

Atlanta is always a most gracious and a most charming host. The banks, the various civic organizations and many of her outstanding citizens have expressed a real pleasure that this large group of southern business men are coming to her city.

The banks of Atlanta will entertain the board of government at a breakfast on Friday morning, and will also entertain the ladies at a luncheon Friday noon. In the afternoon, while the men are busily engaged in discussing their serious problems at the round-table, the ladies present will be taken on sightseeing excursions in and around the historic city. All of these facts indicate a large and enthusiastic attendance and a splendid and constructive meeting.

Although the program has not been fully decided upon as this is being written, it is practically certain that a well informed and outstanding speaker will also appear on the Friday morning program, discussing concretely and specifically the prodigality of governmental expenditures and the ever-increasing tax burdens. Although this subject has been discussed much during the past few months, it has nearly always been handled by some one of a more or less political mental attitude. The speaker making this address will largely confine his remarks to conditions as they are, regardless of political preferment, or political advantage, dealing cold-bloodedly with the situation effecting our economic recovery.

The afternoon program will be somewhat similar to those that have been followed during the last few years, in that a general round-table discussion will be conducted by the members of the Association with one of the vice-presidents acting as leader.

The theme for this discussion will center around some of the competition that the extended uses of cotton meet when it comes in contact with other fibers and other materials, both natural and synthetic. This program is being arranged to deal with specific, authentic, recognized conditions. There will be no generalities, or abstractions. It will be a theme in which all of the mills are interested, and competitions by which all are vitally affected.

The Friday evening program will be a banquet of relaxation and enjoyment. There will be no heavy program at this session. The main idea of President Callaway is for this to be largely a social session, in which people may gather and forget their cares and earnestly and happily enjoy contact with each other. Contrary to a precedent that has long existed in the industry, the ladies, instead of being served a banquet separate from that of the men in attendance, will be invited to join with the gentlemen. This statement alone is indicative of the social attitude that President Callaway hopes to develop during the banquet session.

On Saturday morning, May 21st, the executive business session will conclude the program. At this meeting the report of the secretary and treasurer will be read, recounting the activities of the association and its various receipts and expenditures. A report of the various committees—cotton, traffic, legislative, resolutions and others—will be read. The officers for the ensuing year will be elected, followed by the completion of old business.

# New Electric Motor Installation at the Clinchfield Mfg. Co., Marion, N. C.

## Looms, cards from line shafts; pickers, drawing, spinning individual drive; slubbers from two-frame motors; intermediates, speeders in groups

By George Wrigley
J. E. Sirrine & Company.

**A BRIEF and interesting description of changing over a typical textile mill to electric drive; covering the motor installation and auxiliary equipment.**

SEVERAL new and interesting features are embodied in the recently completed electrification of Mill No. 1, Clinchfield Mfg. Co., at Marion, N. C. The mill is equipped with 25,200 ring spindles and six hundred 40-inch looms making print cloths from 30s warp and 40s filling yarns. The mill was completed in 1915 and, until recently, was driven by a cross compound Corliss engine through rope drives, shafting and belts.

Power is now purchased from the Duke Power Company and is delivered and metered at 575 volts, 3-phase, 60 cycles.

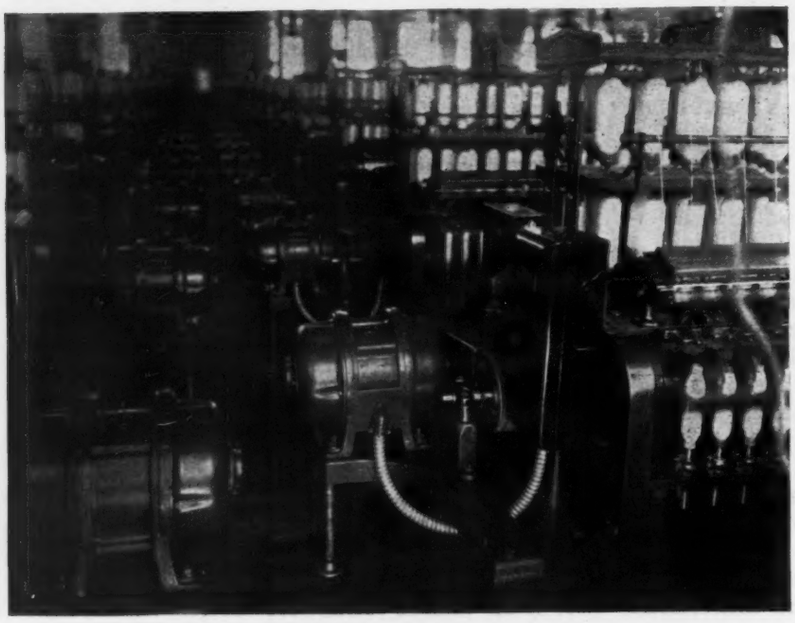
The main mill building has three floors and an unfinished basement and is of standard mill construction. The looms are on the first floor, arranged in twenty rows of 30 each. They are driven by belts through the floor from the shafting in the basement below, there being eight lines of shafting, each driving two rows of looms and four driving one row each. Each single row of 30 looms is driven by a 15-h.p. 1200 r.p.m. motor and each double row of 60 looms by a 25-h.p., 1,200 r.p.m. motor.

V-belt drives are used between the motors and the line shafts. Similar drives are provided to line shafts in other departments. To facilitate installation and save time in changing over the system, all driven sheaves for line shafts are split. All motors are provided with sliding bases to allow adjustment of belt tension.

The pickers, cards, drawing and fly frames are on the second floor and were driven from overhead shafting. The pickers and drawing frames are now driven by individual motors. Each line of card shafting is driven by a motor, the slubbers by 2-frame motors and the intermediates and speeders are driven in groups, the old counter shafts being retained.

The spinning frames are on the third floor and were driven by shafting on the ceiling above, there being a small counter shaft for each two frames. The heads of the frames are in line across the mill. The spinning frames were made by Saco-Lowell and are equipped with McMullen band driven spindles. Each frame has 252 spindles; the warp frames have 1¾-inch and the filling frames 1⅜-inch rings.

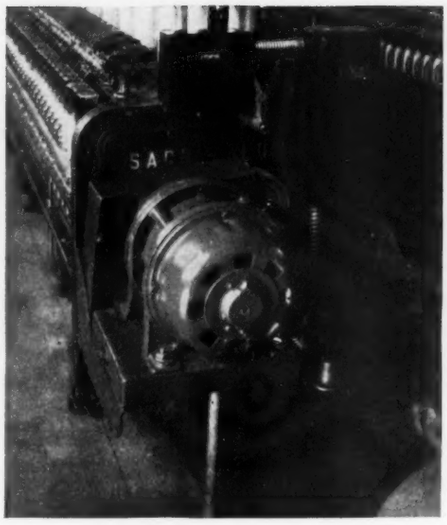
A detail estimate showed that individual motor drives could be applied to the spinning frames at an additional cost not to exceed $25 per frame as compared with four-frame motor drives. Their adoption not only obviated the necessity for shifting the frames, as would have been necessary with the latter drive, but principally has the decided advantages of better production through maintained speeds, improved lighting conditions and absence of dirt and fly from belts.



Individual motors for spinning gave "better production through maintained speeds, improved lighting conditions and absence of belt dirt and fly."

Each frame is equipped with a 7½-h.p., 1,800 r.p.m. motor. The motors are built with large, smooth air passages and widely spaced ventilating fan blades give a sufficient velocity of cooling air to keep the passages practically free from accumulations of lint.

The motors are placed on steel supports at the foot end of the frames. These supports are made of bent and welded steel plate ⅜-inch thick. All welds are ground smooth and the complete assembly



Close-up of motor and steel plate supports on spinning frame drives . .

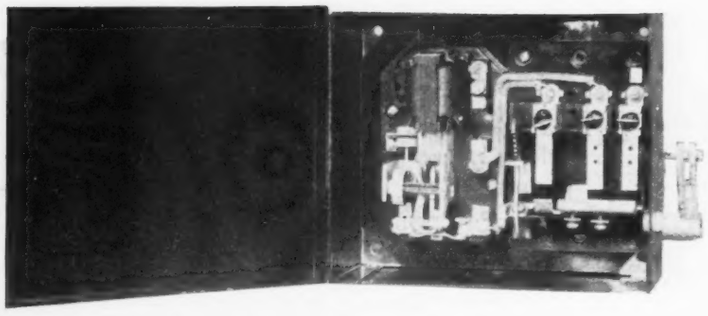
well painted. The weight of these supports is about 33 per cent less than similar cast iron ones. A simple adjustable pipe column running from the bedplate to the floor provides leveling adjustment and takes care of a part of the motor weight. Slots and a jack screw are provided for moving the motor for belt tension. A steel guard is arranged in front of the V-belt drives. The warp frames are operated at a spindle speed of approximately 10,000 r.p.m. and the filling frames at 9,000 r.p.m. All frames are equipped with shipper rods.

All motors are started at full voltage by connecting them directly across-the-line through magnetic switches. These switches are of the combination type with fused disconnects mounted in the same case. The operating handles of the disconnects are external and the doors of the cases cannot be opened until these switches are in the open position. The magnetic switches for the spinning frame motors are controlled by shipper rod operated pilot switches containing time delay attachments in one assembly. Magnetic switches for other motors are controlled from start and stop push button stations containing time delay elements. All time delays on these controls are set for approximately two seconds, allowing the motors to coast through short time interruptions of line surges and avoiding unnecessary shutdowns. Time delay undervoltage protection as well as time delay overload protection is provided on the switchboard feeder oil circuit breakers.

Motors for spinning frames and pickers are equipped with ball bearings and the other, larger motors with sleeve bearings.

The wiring is in galvanized conduit throughout. Varnished cambric insulated cable is used for all sizes of No. 6 B&S and larger. All mains are standardized on the 500,000 c.m. size and connected loads approximating only two-thirds of code allowances.

An automatic outdoor type induction voltage regulator is provided for the lighting system and a small motor generator set for supplying direct current to the motor of the tying-in machine.

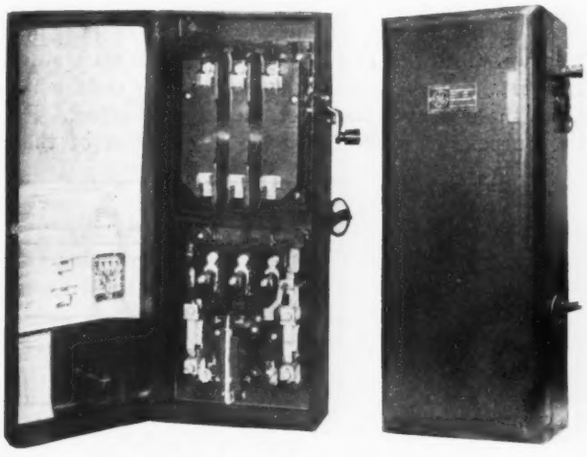


Photo, courtesy General Electric Co.

Enclosed Relay and Control Switch.

A complete blow-off system for cleaning motors and textile machinery is being installed. This is to be provided with valve stations so placed that any machine can be reached with a 75-foot section of hose.

A 1,500 g.p.m. standard underwriters' fire pump with accessories is being installed for the protection of this mill and its neighboring mill, No. 2. Its installation will allow the shutting down of boilers during the week ends of those months when steam heat is not needed for the buildings. The saving in coal and



Photo, courtesy General Electric Co.

Combination Magnetic Switch—Shown Open and Closed.

labor will pay a high rate of return on the investment. The 150-h.p. motor is started at full voltage through an oil circuit breaker.

The control equipment for the fire pump motor is in accordance with the new specifications of the fire underwriters and is extremely simple and practical. It consists of a safety type disconnecting switch, an oil circuit breaker equipped with time delay features and omits all instruments and pilot lamps.

The cost of the complete installation, including equipment, wiring, supports, drives and engineering was $1.60 per spindle or $30.50 per connected horsepower. This figure, however, does not include the fire pump and blow-off system.

The electrical apparatus was furnished by the General Electric Company; the V-belt drives by the Allis-Chalmers Mfg. Company; the motor supports by the Greenville Steel & Foundry Company; and the wiring installation by the Carter-Alrich Electric Company. J. E. Sirrine & Company are the engineers.

# Leno Weaving and Designing

## Part One

By Thomas Nelson
Dean N. C. State Textile School.

**A NUMBER of years ago, Mr. Nelson published in our columns a complete series on leno weaving. In response to many current requests, we now present another discussion of this subject by him, "Leno Weaving and Designing". In its preparation, some of the fundamental information in the previous series has been incorporated, and the present series covers all subsequent developments in this art. We feel this series will particularly interest those engaged in fancy weaving . . . . . .**

RECENTLY leno weaves in cloths have been made very extensively, in fact, in the cotton goods trade, leno cloths have played a very important part. There are many readers of textile papers who do not know just exactly what leno cloth is; there are others who know what the cloth is, how the leno weaves appear in the fabric, but they do not understand how the effect is obtained. In this series of articles an effort will be made to illustrate as clearly as possible the principle of making lenos.

Leno weaves differ very essentially in principle from the regular or ordinary weaves. The ends in a leno weave do not run at right angles to each other, but certain ends cross over or under other ends, which gives these weaves their peculiar zig-zag effect. For the purpose of simplifying the explanation of these weaves we will make three divisions, and call them (1) *hemstitch leno*, (2) *net leno* and (3) *full turn leno*.

Before examining into the methods of obtaining these lenos, different diagrams will be given which can be examined, and being in an enlarged form, the crossing of the thread will perhaps be better understood than if woven samples were shown.

Fig. 1 illustrates one end crossing under one end in three different and distinct effects. In all three effects it will be seen that the end marked *D* is first woven in on the right hand side of the end marked *E*, then passes under the left hand side of the end *E*. In the first diagram only one pick is put in; then end *D* passes under, and another pick is put in; the end *D* then passes back to the right hand side, and this is repeated. In the second diagram two picks are put in; then end *D* makes the change, and two picks are again put in; then the end *D* passes back to the right hand side to be again repeated. In the third diagram three picks are put in; then the changes are made. It will

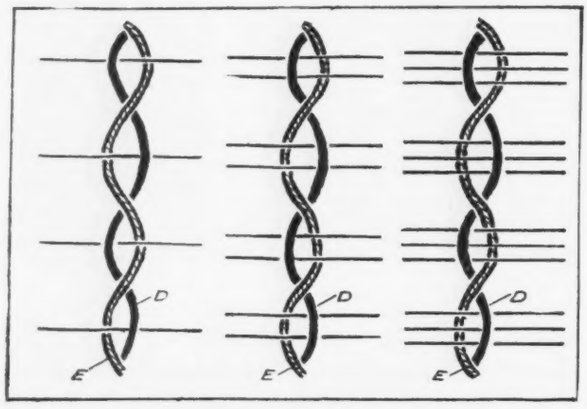



Fig. 1. Different Effects with Leno Gauze Weave.

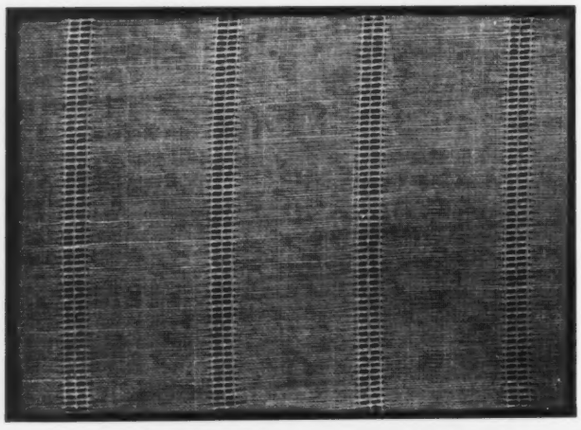


Fig. 2. Showing Leno as a Veined Stripe.

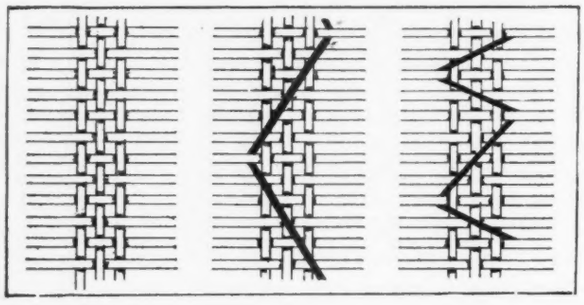


Fig. 3. Fig. 4. Fig. 5.
Representing "Net" Leno Weave.

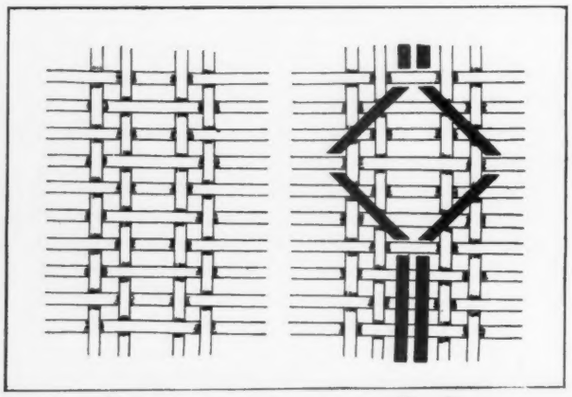


Fig. 6. Fig. 7.
Showing Production of Diamond Effect.

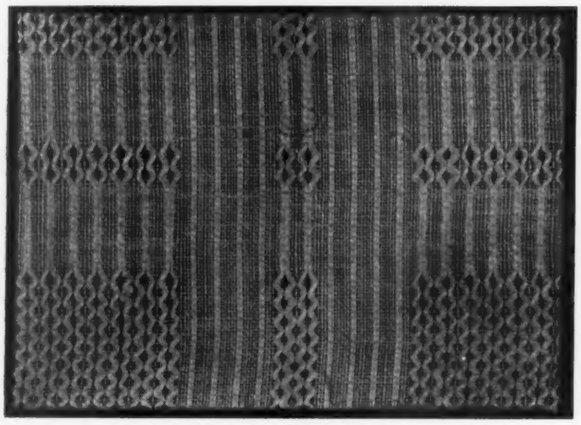


Fig. 8. Sample of Net Leno Cloth.

be noted that all of the changes are made in exactly the same manner, the only difference being in the number of picks put in before a change is made.

If the reader will examine some mosquito netting, he will find that the ends work exactly as in first diagram Fig. 1. Fabrics from this weave are also often called "gauze", and the weave itself is often called the gauze weave. Second and third diagrams are made on exactly the same principle, but are generally used in combination with other weaves in the fabric.

Fig. 2 is a sample of cloth combining the leno weave, third diagram Fig. 1, with the plain weave and making what is known as a veined stripe.

The leno weave is repeated three times in each stripe, and the effect is readily seen in the cloth. Frequently this weave is made with four picks in the change, which gives a slightly more open effect. These examples illustrate the first division known as the hemstitch leno. Other effects are obtained by combining these weaves together, but the principle of making them is the same.

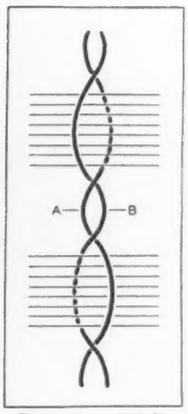



Fig. 9. "Full-Turn" Leno . .

The second division known as the net leno is illustrated in Figs. 3, 4, 5, 6, and 7. Fig. 3 is simply three ends weaving plain. Fig. 4 illustrates a "crossing" end placed as it were on top of the three plain ends, but giving a different effect from Fig. 5. Fig. 6 illustrates 4 ends weaving plain, with a space dividing them into two sets of two ends each. Fig. 7 shows a "crossing" end on each set of the 2 plain ends. Fig. 8 is a sample of net leno cloth from which it will readily be seen that Fig. 7 is an enlarged diagram showing the two "crossing" ends forming a diamond effect.

The different effects which can be obtained by this method are practically unlimited, and when the method of making one of these effects is clearly understood, there should be no difficulty in making others.

Fig. 9 is a sketch of two ends of a full turn leno, constituting the third division. It will readily be seen from the diagram how the end marked *A* makes a complete turn around the end marked *B*. This is the distinguishing feature of this leno, hence the term, "full turn" leno.

### Movements to Produce the Leno Weave.

A careful examination of all the different examples given will show that there are practically only two movements required to make the changes required in leno weaving, the difference in effect not being obtained by the manner of changing, but by the number of picks put in a shed before the change is made. This is illustrated by Fig. 1. In Figs. 4, 5 and 7 three different patterns are made, but all are produced on the same principle of changing the crossing end, first from one side and then to the other, the difference in ef-

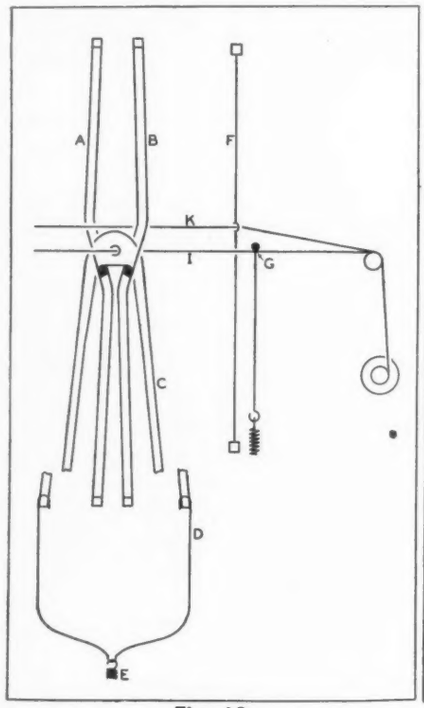



Fig. 10.

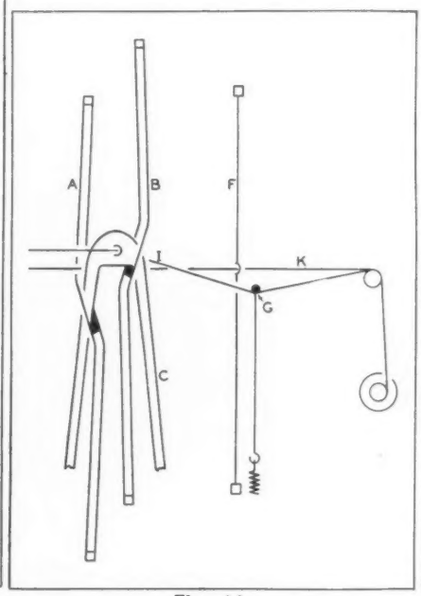



Fig. 11.

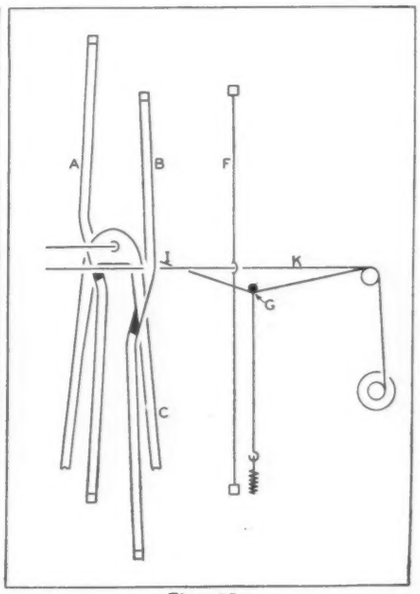



Fig. 12.

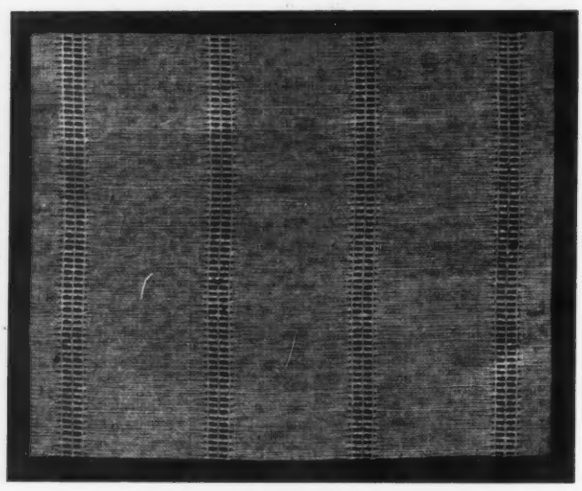


Fig. 13. Sample of veined stripe leno fabric.

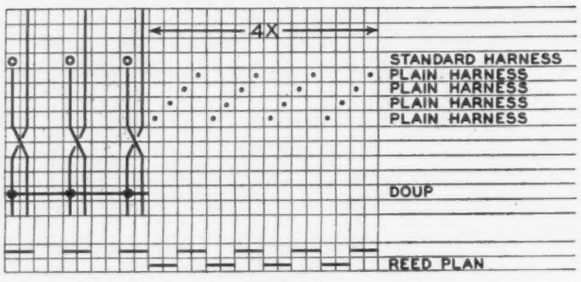



Fig. 14.

fect resulting from the number of picks put in the cloth between the changes and the number of ends crossed.

These two changes of the crossing thread are known as the "open" pick and the "crossed" pick. In order to understand thoroughly how these two changes are made, it is very important that the method of drawing the ends through the harness and doup be clearly understood.

### Construction and Arrangement of the Doup Harness.

The ordinary style of harness shafts and heddles are used to make leno cloths except for the doup heddle. Two distinct types of doup heddle are used, one type being a doup heddle and twine doup; the other being the steel heddle doup. The steel heddle doup has practically superseded the twine doup when used as a bottom doup except possibly for the very finest of fabrics.

### Steel Doup Heddle.

Different methods may be used to operate the steel doup heddle. Method 1, by using standard harness and a compensator rod in place of crossing harness and easer, in connection with the doup heddle. Method 2, by using crossing harness, standard harness and easer in connection with the doup heddle. Both of these methods will be given.

Fig. 10 illustrates the construction of the steel doup heddle and also shows clearly the method of drawing in the ends for a leno with one crossing end and one standard end. The doup heddle is sometimes referred to as the "straddle".

*A* and *B* in Fig. 10 represent the lifting parts of the heddle or straddle and for the purpose of clarity the section marked *A* will be referred to as the "cross doup", and that marked *B* the "open doup". In other words, for crossed pick *A* will be raised and for open pick *B* will be raised. This must be kept in mind when drawing the ends through the harness and the doup. *C* represents the doup needle through which the crossing end passes. A yoke marked *D* is connected to the heddle bars at each side and is for the purpose of steadying the doups and drawing them back to their original position after a change has been made from one side to the other. This is accomplished by the

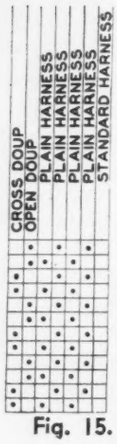



Fig. 15.

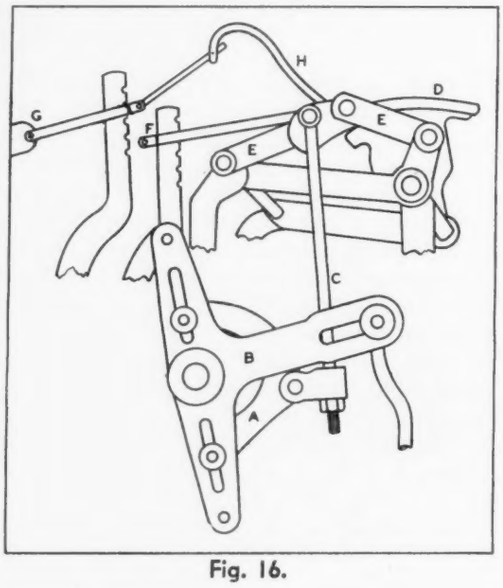



Fig. 16.

use of the spring marked *E*. *F* is the standard harness, *G* the compensator rod. This figure represents the original position of the doup and harness shafts before any change has been made.

Fig. 11 illustrates an open pick in which the open doup *B* has been raised. This keeps the crossing end *I* on the right-hand side of the standard end *K*.

Fig. 12 illustrates a crossed pick. Cross doup *A* is raised. The crossing end *I* is pulled under the standard end *K* and is on the left-hand side of the standard end. These are the only two movements necessary to make a hemstitch leno.

*Note:* Crossing end passes under compensator rod and directly through eye in doup. This rod is kept in place and supported from each side of the loom by brackets or any method which is convenient, a spring being attached to each end of the rod. In actual practice the rod is somewhat lower than shown in illustration. When the change is being made from open to crossed pick the spring acts with the rod as a compensator.

### Hemstitch Leno Fabric.

These fabrics are also called "veined" stripe lenos, the leno ends forming an open stripe in the fabric.

Fig. 13 illustrates a hemstitch leno fabric. Fig. 14 is the drawing-in draft and reed plan. Fig. 15 is the chain plan.

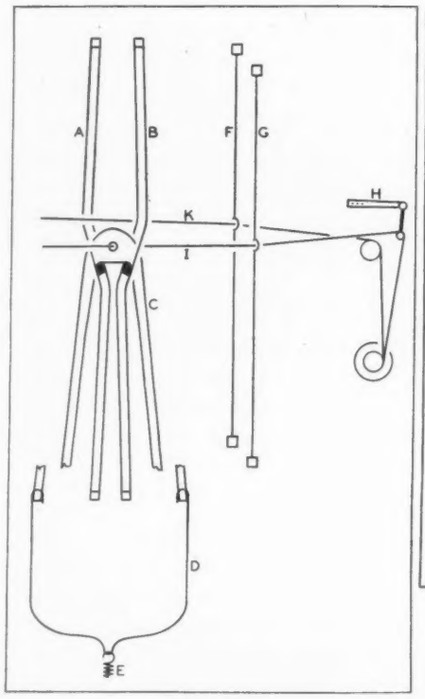



Fig. 17.

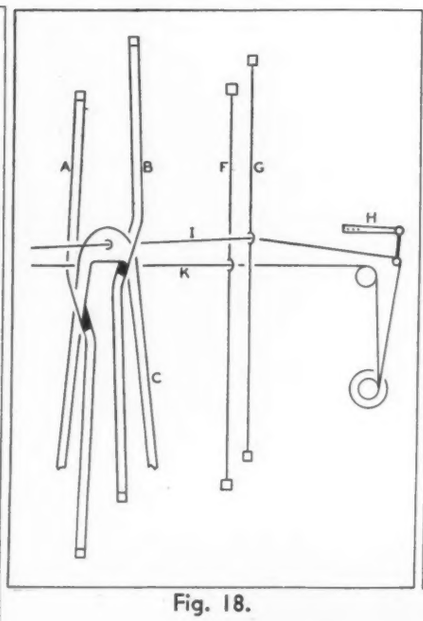



Fig. 18.

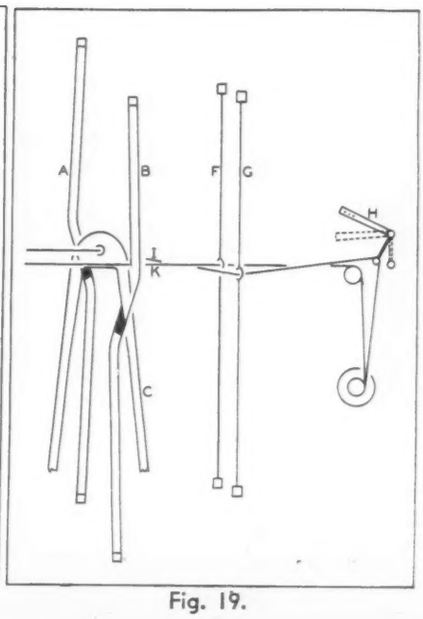



Fig. 19.

The hemstitch leno has one end crossing one with two picks in each change. For the first change or the first two picks, open doup is raised, cross doup and standard harness not raised; for the second change or the second two picks, cross doup is raised, standard harness left down. This completes the pattern and repeats throughout the cloth.

*Note:* On all these lenos, the standard harness is connected to the jumper as it is not required to be raised by the dobby for the pattern. The jumper is used for the purpose of raising the standard harness about half way in the shed to allow the crossing end to pass under the standard end.

A jumper motion is illustrated at Fig. 16. This is operated from rocker arm *B* through bracket *A* and rod *C* to toggle levers *E*. When toggle levers are level, quadrant *D* is forced out as far as it will go. As standard harness is attached to loop at *F* and which in turn is fastened to the quadrant by a strap, the standard harness is raised half way in the shed. The loop works on the outside of the standard harness lever.

Method 2 is illustrated at Figs. 17, 18 and 19. In place of the compensator rod a crossing harness marked *G* is used and the crossing ends drawn through the heddles on this shaft. An easer rod or slackener marked *H* is also used. Fig. 17 illustrates the original position. Fig. 18 illustrates the open pick. Fig. 19 illustrates the crossed pick. Fig. 20 illustrates the chain plan for veined stripe fabric Fig. 13, the crossing harness being raised with open doup for open pick. In many cases the crossing harness and easer are used but the crossing harness is not raised

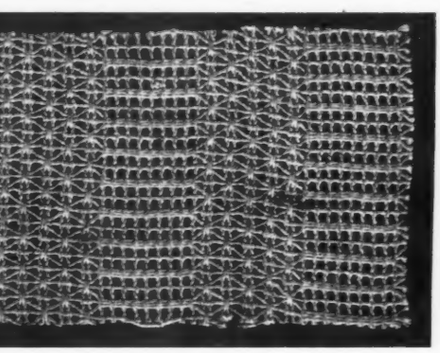


Fig. 21. Sample illustrating the use of two sets of doups.

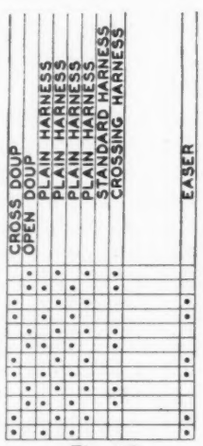



Fig. 20.

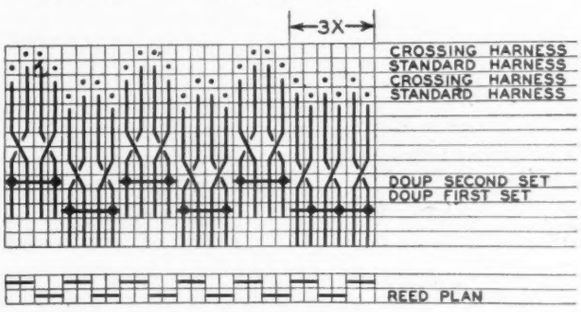



Fig. 22.

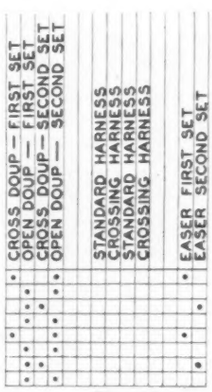



Fig. 23.

Fig. 24.

on the open pick. As to which is the best of these methods is a matter for the one who is making the leno to decide. The use of the crossing harness, whether raised or not on open picks, will enable the weaver to find a broken crossing end and draw the end through the harness quickly. The easer bar will also take up much of the strain.

Fig. 21 illustrates a curtain fabric made with two sets of doups. The drawing-in draft and reed plan is illustrated at Fig. 22. Chain plan using crossing harness and easer. but not raising crossing harness on open picks, is illustrated at Fig. 23. This fabric is a good illustration of making a fancy effect by combining two sets of doups and drawing the crossing ends both right and left hand doups on the same set. Fig. 24 illustrates the chain plan for fabric Fig. 21 but not using either crossing harness or easer.

(The second installment of this series on "Leno Weaving and Designing" will appear in an early issue. —The Editor.)

# Georgia Cotton Manufacturers Hold Interesting Convention

### Norman Elsas Elected President; E. G. Field and H. H. Willis Discuss Costs and Textile Education.

An interesting and constructive meeting was held at the annual convention of the Cotton Manufacturers' Association of Georgia, on Tuesday evening, April 6th, and Wednesday morning, April 7th. The important subjects of cost in relation to management, and the need of better-organized educational methods in the textile school, were the high-lights of the meeting.

D. W. Anderson, manager, Pacolet Mfg Co., New Holland, Ga., presided as president. Theodore M. Forbes of Atlanta is secretary, and submitted an annual report reflecting a year of active work and accomplishment through the Association headquarters, with regard to legislation, taxation, public relations, compensation insurance, etc.

At a business session, Norman E. Elsas, secretary of the Fulton Bag & Cotton Mills, Atlanta, was elevated to the presidency of the Association. L. L. Jones, general manager, Canton (Ga.) Cotton Mills, was made vice-president and treasurer succeeding Mr. Elsas; and Mr. Forbes and Hatton Lovejoy were re-elected secretary and general counsel respectively. Frank B. Bradley, vice-president, Eagle & Phenix Mills, Columbus; and James W. Cox, Jr., president, Enterprise Mfg. Co. and Sibley Mfg. Co., were added to the board of directors.

The first session on Tuesday evening was of an executive nature, involving discussion of association activities. A special feature was a comprehensive address, "Costs in Relation to Management," by E. G. Field, of William H. James & Associates, Atlanta, of which an abstract appears on page 37 of this issue.

### Address on Textile Education.

The feature of the second session on Wednesday morning was an address by H. H. Willis, director of the textile department at Clemson College, on "Practical Research in Textile Education—Why, How and Where." Mr. Willis covered thoroughly the present-day problems in textile education. He explained how the old "lecture" method is inadequate in teaching textiles; because "about 50 to 70 per cent of the students have had no practical experience and, under the lecture system, are so busy taking notes that they have no time to absorb what the lecturer is saying."

He then described in detail the plan which has been carried out in recent years at Clemson and which is advocated for adoption and adaptation by other schools. Each teacher was asked to prepare the successive lessons of his courses in written form, which were furnished to students in mimeographed and bound form as a text. Under this system a lesson may be assigned for study before class. These courses were re-organized with a view to eliminating out-of-date material and to include recent textile information, and to correlate the theoretical work with the practical; practically all of the Clemson courses being put on the problem basis, that is, using actual problems such as come up in the industry.

Mr. Willis pointed out that since 1927, the teaching staff at Clemson has gathered much valuable information from practical men, technical meetings and technical magazines, compiling it on a teaching basis and incorporating it in the lesson notes. "Since 1927," he said, "from 80,000 to 120,000 sheets of notes per year have been mimeographed for the students at Clemson. Much of this material, though excellent, is still in the rough, requiring revision and editing, which requires the services of a specialist in educational methods, because the teacher who keeps up with modern developments in the industry and with up-to-date educational methods in addition to carrying a teaching load of from 15 to 20 hours per week does not have much time for the revision of supplementary material. ***Three of our eleven mimeograph notebooks have been edited; the other books are collections of valuable material ready for organization. This work, although only well started, has already proven of inestimable value to our students in that we have been able to cover more than twice the ground formerly covered under the old lecture method."

Mr. Willis indicated the need of a specialist to organize and correlate this material, to prevent overlapping, estimating the cost to be about $3,000 per year for probably two years. He added that he has been promised co-operation equivalent to $8,000 by textile equipment concerns in offering to supply cuts and free consulting service in the work.

A luncheon on Wednesday concluded the meeting. At this time officers were elected, and Retiring President Anderson was presented with a handsome golf bag and a set of matched wood clubs and a set of Bobby Jones registered irons, in appreciation of his work during the year. The presentation was made by Past President J. A. Mandeville.

# Costs in Relation to Management

By E. G. Field
Wm. H. James & Associates.

**MR. FIELD, the author of this paper, is an outstanding cost engineer and consultant specializing in textile mill work. He has been a frequent contributor to COTTON's columns on a number of subjects pertinent to the general discussion in the accompanying paper. A list of some of these contributions follows:**

"Why Individual Fabric Costs?", May 1929 Issue of COTTON.
"Cost Application of Mill Expense", January 1930 Issue of COTTON.
"Comparing Balance Sheets", August 1930 Issue of COTTON.
"Operation Standards", September 1931 Issue of COTTON.

**Reprints of any or all of these articles, which discuss in detail some of the major topics covered in the accompanying paper, will be furnished to executives requesting them who desire to study further along any of these lines.**

FOR several years it has been frequently said that one of the principal troubles of the cotton-textile industry is the general lack of information about costs. However, a little study of the situation will bring out the fact that the industry may suffer more from lack of proper use of cost information, than it does suffer from the shortage of cost information.

Almost every mill has an annual audit that furnishes a report of the financial situation and the operations of the past period. Although there is a big difference in audit reports, the statements should include an account of operations in order to place before the executives a review of the balance between income and expenditure and the important items comprising the profit and loss. This brings out the distinction between expense accounting and cost accounting; expense accounting is concerned with the amount of expenditure as classified by things procured, while cost accounting is concerned with developing the costs of the products ready for delivery to customers. And so each manager does know the costs of expenditure; that is, how much he paid for electric current, how much supplies were used, how much the payrolls totaled, etc. But he does not always know what the amounts should have been! That is the first stumbling block. So the manager makes comparison with the expenditures in past years, and then he runs into trouble because of difference in volume of business done and changes in other conditions. In an effort to partially hurdle this obstacle, recourse is made to averages and the classified expenditures are reduced to expense costs per average pound. While these averages are often of use for detecting items deserving of special attention, they are quite meaningless for use in determining the relative costs of the many products that usually are included in the total production that has been averaged.

That total averages may at times be absolutely meaningless, is presented in Illustration 1 thus:

| | Case A | | | Case B | | |
|---|---|---|---|---|---|---|
| Product | Units | Average | Amount | Units | Average | Amount |
| X | 100 | 14c | $ 14 | 300 | 11c | $ 33 |
| Y | 300 | 6 | 18 | 400 | 5 | $ 20 |
| Z | 600 | 8 | 48 | 300 | 9 | 27 |
| Total | 1,000 | 8c | $ 80 | 1,000 | 8c | $ 80 |

ILLUSTRATION 1.

You can observe that the same total average of 8 cents appears in each case but with some changes in the proportion of units and with considerable change in the averages developed for the several products. With such mathematical possibilities, you can see that average figures are very limited as to usefulness and can be a source of trouble. Furthermore, proof of the total does not necessarily prove correctness of the details.

There are often requests for descriptions, outlines, forms, manuals, etc., that are desired in order that some person may copy the arrangements and thereby obtain some style of a cost system that may have become identified with a name. While I am very much in favor of manuals for the use of persons who are studying cost problems, I do believe that they should not be followed closely unless the work is being done under the direction of one experienced in the variety of problems and conditions that may be met. To state this view quite plainly, I caution you against attempting to take any "canned" cost system with the thought that it can be dropped down in your plant and then be expected to fit all your requirements. Each mill has its own peculariarities of location, facilities, labor, equipment, product, etc., that require individual consideration. To these physical differences I must add the peculiarities of management, which are unquestionably the more variable and present a wide range of ability.

Mr. Field.

### Need for Cost Information.

Since many of the differences in cost viewpoints are largely brought about by differences in purpose, it is well to start with a plain understanding of these requirements. The first purpose of costs is usually thought of as the requirement to be able to quote prices intelligently and we have literature concentrating upon costs for selling purposes. I sometimes wonder if this thought has not been over-emphasized because selling prices are not based upon cost and never have been dependent thereon. We can admit at the outset that goods are sold at market prices which represent the point between bid and asked prices that will permit goods to exchange most readily. While the individual manager will benefit from any improvement affecting the group as a whole, his

This is an abstract of a paper presented by Mr. Field to the Cotton Manufacturers Association of Georgia, Atlanta, April 5th, 1932.

individual opportunity is in dealing with the market and conditions as he finds them, profiting within the limitations existent, and then contributing to lifting the limitations for the benefit of the group and thereby further benefiting himself.

That there is a need for the specific information about each fabric is generally admitted but not fully appreciated or the specific information would be more commonly available. Most managers do not fully realize the tremendous differences that properly exist between some of the products that they make. In an article, "Why Individual Fabric Costs", in the May 1929 issue of COTTON, several examples were offered of the cost variation that had been observed in certain plants. (See Illustration 2.)

CONVERSION COSTS.

| Product | | Cost | |
|---|---|---|---|
| Class | Fabrics | High | Low |
| Sheetings | 108 | 20.25c | 8.00 |
| Twills | 37 | 17.37 | 9.25 |
| Drills | 25 | 15.79 | 9.49 |
| Sateens | 21 | 18.91 | 10.07 |
| Miscellaneous | 16 | 18.46 | 8.17 |
| **Total** | **207** | **20.25c** | **8.00** |

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ILLUSTRATION 2.

### Uses of Costs.

Mill managers should be interested in this merchandising possibility, and the opportunity to apply selective ability. There are times when the volume of business is low and you may be confronted with the complications of other problems and you may find it necessary to take the kind of business then available until you can reach customers seeking cloths that offer better profits. *Profits are the residual dollars between sales and costs.* Too much concentration of attention has been given to costs and too little consideration has been given to profits.

While the ability to figure costs against quotations is necessary, the greatest value in cost information is found in the control features that it opens to alert management. As executives you have a continuous problem in cost reduction. One of the most effective ways in which you can keep your costs down is by constant attention to the prompt correction of the conditions that make your costs go up. Should you stop to analyze the way in which you spend your usual day, it would be noticeable that the largest portion of time is spent in hunting for the things that need attention.

To meet this urgent need of management, the principle of exceptions has been applied. Today you should have placed before you a few key reports that will immediately give you a general outlook on the operations and permit you to go over the items and events easily and quickly so that you can immediately separate the things that are all right, from those deserving your attention. This opportunity for cost control exists in most plants regardless of the merchandising possibilities and in the majority of cases it presents the greatest opportunity for the profitable use of cost information.

When the costs are fully under control and the merchandising is being done profitably, there are still other questions, also matters largely of policy, such as expansion, replacement, curtailment, new products, etc., which are constantly calling for more cost information and must be well answered if the results of policy changes are to be observed as profits. So it is that we can view costs in relation to management for a variety of uses, provided the cost program will furnish the necessary answers and provided the management is capable of using the facts developed.

### Costs Start with Accounts.

In order that your cost figures may accommodate this variety of information and also serve your accounting requirements, it is essential that the costs be arranged to provide the facts for the several purposes. We cannot be satisfied with any hurried grabbing of figures into a quotation price, but must follow reasonable separation that permits ready assembly for any of the various purposes. If costs are to be used as an aid to place profits in the operating statement, we will naturally make the operating statement the starting point of our arrangements and then proceed in an orderly manner to the execution of definite plans with the results being kept before the manager by the frequent periodic financial reports.

Someone might like to ask whether or not a cost system should be "tied-in" with the regular accounting, for there seems to have been some kind of a fear thrown up around this phase, "tied-in". I think that much of the argument has been unnecessary and could have been avoided if some of the disputants had stopped to explain what they apparently were arguing. In the accounting sense, the cost work should be related to the general accounting so that the cost accounting will be adequately proven to have dealt with the correct amounts in the proper way and to permit of the costs being used in further explanation and in detailing some of the operating results.

As to whether or not the treasurer or other accounting official is competent or has the time to compute the technical calculations of mill costs, has no connection with the use of the words, "tied-in". In practice it is necessary to have the cost work directed by one who is thoroughly familiar with the requirements of his highly specialized work and very often the cost man reports directly to the manager although he continues responsible to the treasurer for all figures obtained from or returned to the general accounting for use in the financial statements.

### Normal Costs.

When sales prices are affected by special considerations of moment, it is usually desirable that facility be provided to arrive at a basic normal cost condition. The dividing of actual expenditures by actual

pounds will not give the answer. It is very probable that much of the trouble with the market prices for goods can be attributed; (1) to the inability of the individuals to arrive at cost figures properly reflecting the costs at the normal condition, (2) to the individuals not understanding the importance of the normal conditions, and (3) to intense competition in an effort to upset the normal balance of business.

The importance of the costs at normal capacity can not be over stated. Illustration 3 is presented to show the operating capacity of the cotton-textile industry for the last several years, as published by the U. S. Department of Commerce in the Commerce Year book for 1931.

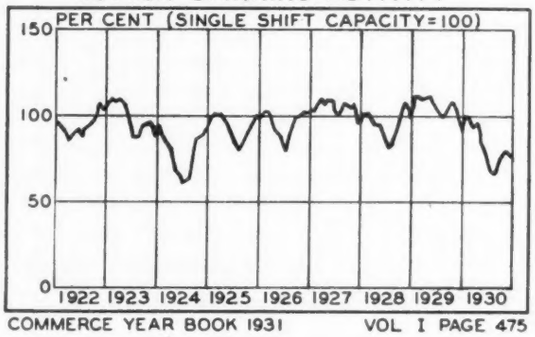



ILLUSTRATION "3"

While you want to know your actual costs, it is important that you also know your normal costs, as basic figures with which the actual costs can be compared. It is difficult to state just where this normal level is located in some individual cases, but it is unquestionable that the normal capacity for the industry as a whole is below a single shift. Without further argument let us assume that a single shift operating capacity is fundamentally sound and accordingly you should know your costs that would apply at that level of operation.

### Overtime.

Among the cost problems related to management, the question of capacity seems to be of paramount interest. Today it is probably more often asked about as overtime and the common inquiry is—"How much will my costs be cut by running overtime?"

Today many mills are suffering from an unbalanced equipment condition that requires part of the mill, usually most of the yarn making operations, to run day and night in order to keep the weaving on a single shift basis. But some mills find that the temporary condition is profitable in that it stretches the capacity without additional fixed investment, and often increases the effectiveness because of the close attention which eliminates the tendency for production to drag.

Other considerations are interlocked with the changes in capacity operated. Large volume will often permit of more specialization to the advantage of the skilled workers and at a saving to the mill.

The most noticeable effect of overtime is in the production of more goods to sell without corresponding increase in the fixed charges for depreciation, taxes, and insurance. In addition the administrative, general and financial expenses are further divided over more output.

Although volume may not affect profits, because of the price declines that may accompany excess volume, still it must be admitted that the costs shown in your profit and loss statement would be different at various capacities. To suggest the possible relation in a specific instance, probably entirely different from that in your own case, Illustration 4 graphically presents how the processing labor cost in one mill did vary because of volume changes. Illustration 5 next shows a diagram of the relative costs-over-cotton in a hypothetical case. Do not attempt to use these curves to decide your questions, because you do not know where your 100 per cent over-all position would correspond to the plant balance in the given case. Moreover, if you want to run your business successfully, you must know its peculiarities and should run it so as to take the fullest advantage of its own profit-making possibilities.

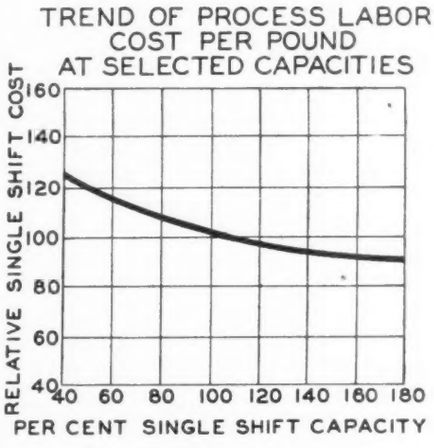



ILLUSTRATION "4"

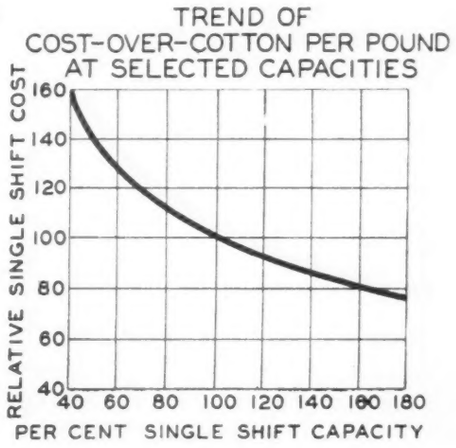



ILLUSTRATION "5"

Granting for the moment that your costs would be lowered by the overtime operation, what would be the effect upon your profits? If it were necessary to cut the price in order to get that overtime volume, then it is probable that the expected profit would correspondingly disappear and the larger output would not have brought more profit. Moreover, should you sell the business under your competitor's price in order to enlarge your volume by increasing your proportion of the business, you can then rightly expect retaliatory measures. In consequence the cut price will be met and soon the situation will be changed back to the previous proportion of business. Thus you will have the original volume at the re-

duced prices and accompanied by consequent loss of profit according to the price cutting.

There is much to be said in favor of the sound price structure that has been so needed in the textile industry for several years. Probably part of this shortcoming is due to executives not knowing their single shift costs.

Among some textile men there is a tendency to concentrate attention upon the cutting of cost by increasing the capacity operated. Cutting costs by making more goods than you sell is a form of management madness. When tempted by such narrow-minded thoughts, you will do well to remember that you are in business to make profits and not for the sole objective of showing lower cost figures.

Just at present a few managers seem concerned about low costs as a means to continue their personal jobs. This is well brought out by the contest for heavy numbers that will increase the poundage per hour and thereby cut down the unit costs. These cases of using cost figures as a means to slide down to the lower unit costs that belong to a different class of products are certainly not an example of the way in which costs should be used to develop profitable business.

To accomplish a definite cost reduction, specific application must be given to items like these: more production per machine, more machines per operative, less expense per machine, etc.

### Sales Taken at a Loss.

While some people would approve the theory that business should never be accepted at prices that will show a loss, customary business practice often finds exceptions that make it advisable to sell goods at a loss. Two very different situations may be encountered; (1) when it is necessary to maintain your proportionate share of the business available, and (2) when you can increase the total profit.

For your consideration I am suggesting that it should be a fundamental requirement for each mill in any group to accept the business necessary to maintain its proportionate share of the business available. If you are out of sympathy with the mill that cuts prices to increase its share of the available business, then you must also meet his prices and help to give him an object lesson unless you want to step aside and give him enough volume so that his temporary advantage of lower costs will offset the price decline and you will be helping him to accomplish his purpose at your expense.

Please understand that I am not arguing that the business should be divided artificially for I believe that each mill should strive for that part of the available business rightfully earned according to its record for quality, co-operation, promptness, etc. These advantages are outstanding to the possessor of such a reputation and are not to be thrown aside in favor of price cutting.

Two cases will now be mentioned where you may be warranted in taking an individual order at a loss in order to increase your total profits.

Here I will submit this principle: that you work for a profit or a loss on a line of merchandise as the sum of the profits and losses on the several items that comprise that line. So, if you have customer that has a few special numbers of unusual quality, of special features, or for experiment, it ultimately may be to your advantage to take those items at comparative prices, even though at a loss, as long as you are still left a reasonable profit on the composite of the products in the line that you obtain from that customer.

Consistent with that viewpoint, the final profit is a result from a series of product lines and it may at times be desirable to add a line at a loss in order to build up the capacity operated and thereby increase the over-all profit. This method of profit building is sometimes called "back-logging" a plant. If it were generally done, it might not be profitable but there are times when it certainly is profitable to the individual mill. However, it should never be recommended unless the mill does fully know both its normal and actual profits.

### Profit Per Loom Schedule.

Should you care to study the effects of different solutions to merchandising problems, then I would recommend that you begin with a thoughtful consideration of your loom schedules. Cost your work plan and show the profit by fabrics and in total! I wonder how many managers, gathered here tonight, have at their respective mills sufficient cost facility to produce a statement of profit and loss per loom schedule, with the correctness of the profits reasonably proven. With an adequate procedure, the proof is constantly being developed. When you can set down the profit or loss on each order at the time of the acceptance, and that profit will be demonstrated by the actual results at the time of shipment, then you will realize the strength of conviction added to your thinking by the sound demonstration of cost knowledge. Costs then have been made the manager's tool and no longer are his master.

### Depreciation.

Any talk on costs today should include a few words on depreciation because of the apparent lack of uniform procedure and especially because of the improper policies that continue to prevail. First, do not think that you are fooling anyone other than yourself and a few stockholders, if you permit a financial statement to go out without including adequate charges for depreciation. Statements without adequate provision for depreciation are today advance announcements of probable management suicide.

Second, the depreciation reserve accounting on your books admits the depreciation accrued but it will provide for replacement only to the extent that corresponding cash has been retained in the business. May I briefly explain to you what usually has become of the funds corresponding to the depreciation reserve. The money therefor was included in

(Continued on page 129.)

# Current Carding Problems and Practices Discussed at Raleigh Meeting

Reported by Robert W. Philip

**BY limiting the questionnaire to a few subjects, the Eastern North Carolina division, whose latest meeting is reported here, provided time for a more thorough discussion of these questions. The result was an interesting "experience meeting" concerning the timely subjects of converting pickers to single-process; different kinds of covering for rollers in spinning; etc., etc. . . . .**

A MEETING on carding and spinning—centering largely upon a discussion of converting pickers to single process, and materials for covering spinning rollers—was held by the Eastern North Carolina Division of the Southern Textile Association at the textile school of N. C. State College, in Raleigh, N. C., on Friday, April 15th. The meeting was in charge of T. W. Mullen, superintendent, Rosemary (N. C.) Mfg. Co., who is president of the Association. M. R. Vick, overseer of carding, Rosemary Mfg. Co., led the carding discussion, and J. W. Cates, superintendent, Edenton (N. C.) Cotton Mills, conducted the spinning discussion.

At a brief business session which concluded the meeting, E. M. Holt, superintendent, Mill No. 4, Erwin Cotton Mills Co., West Durham, N. C., was named chairman of the division succeeding D. F. Burns; D. F. Lanier, superintendent, Oxford (N. C.) Cotton Mills, was made vice-chairman; and M. R. Harden, superintendent, Mill No. 1, Erwin Cotton Mills Co., West Durham, was made secretary.

During the meeting, President Mullen and Secretary Walter C. Taylor, told of plans of the Association for re-organizing their discussion work along lines to supplant the present general carding, spinning and weaving divisions. The Eastern North Carolina division remains intact; but a separate group has been formed for the mills of Northern North Carolina and Virginia—and similar smaller sections may be formed later throughout the South, for the purpose of providing more meetings in different parts of the section that will be more convenient for the members in the different parts of the South than a few general meetings held for the entire membership.

Left to Right: E. M. Holt, M. R. Harden, and D. F. Lanier, new chairman, secretary and vice-chairman, respectively . . . . . .

### Converting Pickers to Single Process.

The timely subject of converting existing two- and three-process pickers into single process was the first taken up by Mr. Vick in opening the carding discussion, which followed a short talk by Thomas Nelson, dean of the N. C. State Textile School.

"We have three processes made into one process pickers," reported E. M. Holt of Erwin. "As to the results, we think they are very satisfactory. The method of hooking these machines up was without the use of an intermediate hopper. Instead of hoppers we have five cones where ordinarily you would have three cones. With this method, each evener is free to even within itself on its section, but the last evener is so arranged that when it lightens or heavies, it moves the others all the way through back to the hoppers; as the belt shifts to the small end of the cone and slows up the feed on the last evener then it slows up the speed of the cones on the other eveners.

"Our loss of laps is about two per cent, and we think this is very satisfactory. I have seen some pickers hooked up for single process that were monstrosities, with no way to make them work. In other words, to make a hook-up work with success there must be quite a use made of ball bearings, because after all the evener carries an extra load." Mr. Holt pointed out that with the use of the intermediate hopper, this was not true, and that he had seen installations with the intermediate hopper working satisfactorily.

G. F. Brietz, superintendent, Selma (N. C.) Cotton Mills, asked Mr. Holt wherein the advantage lay in converting to single process.

"There is quite a saving in labor," replied Mr. Holt. "That is probably the first consideration, although we were not willing to do it with any loss in quality. The way it has worked out we have found that we made a gain in production in that we did not have as great a loss in laps." The method of converting three lines of pickers into single process was described as removing the calender sections from the breaker and intermediate machines, and moving them and the finisher together, also taking off some of the feed apron, eliminating the formation of laps at the breaker and intermediate section, and allowing the cotton to pass in a sheet directly from one section to another, thus eliminating the doffing and creeling of laps in between.

Mr. Vick brought out that, in addition to saving

the labor requirements, the work of the men remaining was also lightened. He said he has one card room changed to a regular one-process picker and that he was interested in knowing more of the methods of changing over existing machines.

One of the biggest savings in the use of one-process picking, Mr. Mullen pointed out, is a reduction in the power consumption, declaring that in the one room where they have a one-process picker they had from 30 to 50 per cent saving in power.

Mr. Vick brought up the question of leaving one finisher picker for the purpose of running rejected laps, etc., and Mr. Holt pointed out that in changing their picker room, they were able to get along with one less intermediate and finisher machine in the hook-up.

J. V. McCombs asked as to the results in cleaning, waste, etc. Mr. Holt replied that it was rather hard to ascertain the effect on cleaning, as he was not at the mill to run a test prior to the change-over, "but I know the cleaning is as good and the breaking strength a little better (the latter due to re-adjustments made at the time of the change.)" He declared that it required about a week to change over one line, this work being done by the mill.

Left, M. R. Vick, and, right, J. W. Cates, who led the carding and spinning discussions, respectively.

A considerable saving in floor space was indicated by Mr. Holt, through making the change, saying in answer to G. E. Moore that the length of one apron, and the calender heads, and the space between the machines is saved in hooking-up as one process.

As to running cotton dyed in the raw stock through the single process picker, it seemed the consensus of opinion among those at the meeting that this was not practical, unless great care were taken in making the correct blends in the opening.

### Opening and Blending with Hoppers.

J. W. Cates asked for a discussion of using hoppers in the opening of cotton. J. W. Bradbury, textile engineer, Textile Development Co., stated that, "we have been recommending this for five years. It is the only way to blend cotton. A bale breaker will blend only four or five bales, but by using hoppers you set four bales in front of each hopper, and that drops onto an apron from each of the hoppers. Where one-process picking is installed in order to get the blend necessary for even yarn it is necessary to blend in the opening a little more than you are doing." The system of hoppers in the opening referred to is that of providing from four to six hopper feeders which all feed onto a long lattice apron going to the opening machinery. This provides an excellent blending of the stock before it is cleaned. (A clipping of a complete description of a South Carolina installation of an arrangement of this kind will be furnished upon request to readers. This appeared in the December, 1927, issue of COTTON.—The Editor.)

Mr. Bradbury declared that the single-process picking which uses an intermediate hopper is very good as this gives the equivalent of the four laps. David Clark of Charlotte described an installation of hopper feeders, in an Alabama mill which he had recently visited, in which the apron onto which the hoppers feed vibrates, causing a certain amount of cleaning as well as blending, to be done here. A man from Rocky Mount (N. C.) Mills said they had just installed a hopper blending system and that they like it.

Mr. Bradbury brought out that if a lap lighter than 13½-ounce is made on single process picking, it is difficult to get an even lap. This led Mr. Vick to a recently published discussion ("Why Insist on Yard-for-Yard Evenness in Picker Laps?" COTTON, March, 1932, page 77) in which it was explained that the thicker a lap is, the easier it is to make an even lap, due to a better distribution of the cotton on the screens of the picker. Mr. Cates asked then if it would not be more practical to run a heavier lap and do more drafting at the card. Mr. Bradbury stated that he had been up to 140 of a draft on bleached cotton with good results—that a similar draft was not successful on cotton dyed in the raw stock, however; that apparently the condition of the fibers in the bleached stock made them more brittle and wiry and permitted the higher draft. Mr. Vick said he believed that in going to that high a draft, it would be necessary to change the licker-in speed, but that he saw no reason why it should not clean just as well, with the licker-in speed being changed.

"I made a test on a 20-ounce lap," reported J. W. Cates. "We changed the licker-in speed from 460 to about 600 r.p.m., and ran this through to the yarn and took the breaking strength, and found very little difference in the breaking strength, and the evenness was better, carding 110 pounds a day."

Mr. Vick pointed out that breaking strength comes from evenness in yarn provided the cotton was not being damaged previously.

J. C. Farmer said they had installed the Saco-Lowell one-process picker, but that it was not possible to run their colors on them on account of the blending, and that they had kept some of their old pickers in order to do the blending with laps. He wanted to know if there is any practical way of dyeing the cotton previously, to correct shade and blend, in order to run it through the single-process machine. Mr. Bradbury reported that he had been in a mill in Georgia which had previously blended with the laps on the picker aprons, and that by carrying this blending back to the system of hopper opening, the speeds of the hoppers had been regulated to provide the desired percentages of each color in the blend satisfactorily. Mr. Vick, Carl R. Harris of Erwin Cotton Mills Co., and others, however, stated that they saw no practical way of doing this accurately and securing an exact shade in colored work.

### Straight Wire and Metallic Card Clothing.

Mr. Vick next asked for discussion of continuous card strippers, but no one present had had them in-

stalled for a sufficient length of time to report on them, and the meeting moved along to a discussion of straight wire and metallic clothing for cards.

"My experience with straight wire clothing has been that the men who come to do the clothing with it want to get out of town too quickly," said Mr. Vick. "You must educate people to a new thing. It used to be that when a shop was erecting cards, the erector would stay until the card was started, but now he wants to get out of town as soon as he has drawn on the clothing. We have two cylinders in one mill equipped with straight wire and one in another; two of these have given us good satisfaction, and at the other mill I found recently that the wire had been ground to a hook; we ground it and it is doing very well."

It depends on what kind of fabric is being made, as to whether the straight or metallic clothing is suitable, declared Mr. Bradbury, who said, "if you are looking for cleanliness, I would not recommend it. As for the hard or metallic wire, I have seen a whole mill running on that and they do not do any stripping or grinding. This mill is running in Germany. They are going to put it also on the flats. The yarn is very neppy, so I think it depends on the fabric and yarn you are making and who is buying it."

T. W. Mullen.

"We have a line of cards with the straight wire on it, and it makes lots of neps," reported C. S. Tatum, manager, Pilot Mills Co., Raleigh. "Of course, if you strip it three times a day like the other clothing you get by pretty good."

"The cleanliness of the work is nothing to compare with cards clothed with the old knee wire," said J. V. McCombs, superintendent, Randolph Mills, Franklinville, N. C. "But I will say one thing: if you will pull your cards up close and *set* them, you will get rid of those neps."

Mr. Vick said he has had his test installations in for only a couple of years and that he feels that on a thing of this kind it should take ten years or so to determine its real application.

Another member reported that they have some cards that have been running regularly with straight wire for two years, night and day, and that they have run them as long as a week night and day, then stripping with a roller and getting less than one-half an ounce of strips. Mr. Harden inquired as to where these strippings go, and the member stated that they go into the goods, as he also has less toppings; but that as far as he can check, the goods made are pretty free of neps.

There was a brief discussion of the last carding question—as to whether it is advisable, in opening up the top rolls on fly frames, also to spread the bottom steel rolls. It seemed to be the consensus of opinion that, while it is a difficult job to spread the bottom rolls, that it is advisable to do this if the top rolls are spread sufficiently to warrant it—in changing from a short to a longer staple cotton, though there were several present who argued that it was not justified.

J. W. Cates led the spinning discussion which concluded the meeting. The first question asked for experiences of a comparative nature, as to cost, quality of work, etc., with sheepskin, calfskin and cork rolls in spinning. M. R. Harden, superintendent, Erwin Mill No. 1, West Durham, made the first report:

### Sheepskin Versus Calfskin Versus Cork Rolls.

"At the present time we have a number of spindles running on cork, some on calfskin and the remainder on sheepskin. The advantages of the calf-skin seem to be in the lasting qualities. You get a smoother and slicker covering. The chief disadvantage is that with the calfskin we get what are known as 'eyebrows' hanging off of the front of the top clearers, and the clearers have to be picked more often.

"The cork roll does not give the eyebrows; the clearer waste is gradually absorbed by the yarn. I think that either calf or cork will outlast sheepskin as far as the cost and lasting qualities are concerned.

"We have had some experience with the cork rolls on over-size and also turned down. We have a buffing machine now and have enough of the cork for covering ten frames of rolls. There is one disadvantage in the cork with the over-size roll, and that is you have to set your rolls too wide apart. If you have a 1-inch roll and put on 3/16-inch of cork and then buff it down then you have about 1 3/32-inch, and you have to set your rolls wider, and on 1-inch cotton and shorter this is too great a setting, although they say the bite to bite contact is not increased much. Another thing is that overnight fluting from the steel roll will make an 'imprint' in the cork, which causes more ends down in starting up in the morning. But there is no comparison in money saving—the cork has it over the other two, and the calf has it over the sheepskin."

C. C. Cates.

Mr. Harden added that "on the over-sized cork roll, because of the increased setting, you cannot get the breaking strength, but on the turned down roll there seems to be little difference so long as the roll conditions are the same. I cannot tell any difference in breaking strength between the sheepskin and the calfskin, but you do have more eyebrows on the calfskin because the covering is smoother." He stated, however, that as the calfskin is used for a while, the eyebrows decrease but do not disappear. Mr. McCombs pointed out that this is true with any new roll; that you will have more or less eyebrows with any new roll. "Our experience with calfskin has been very successful," he said, adding that his roller coverer treats the calfskin by rubbing it with an emery cloth and then putting on some solution which seemed to add to its working qualities. He could not, however, give the formula for this solution. He said calfskin figures out 50 per cent cheaper than sheepskin, even though it is more expensive in first cost.

Nelson Harte, superintendent, Edna Cotton Mills, Reidsville, asked for opinions as to the life of sheep-

skin, declaring that so far he has not had to cover their calfskin except where the rolls were damaged.

Clarence Cates, overseer of spinning and twisting, Edenton (N. C.) Cotton Mills, later reported a cost of 6¾ cents per roll, using the best grade of sheepskin and roller cloth; this figuring out to a life of 4.28 rolls per thousand spindles in ten hours, or 1⅛ rolls per spindle per year.

Regarding Mr. McCombs' statement, M. R. Harden said he had not found calfskin to be any more expensive in first cost than sheepskin, by buying the calfskin by the square foot in large skins, and cutting the cots from these.

L. B. Crouch, overseer of spinning, Rosemary Mfg. Co., said "I have five different kinds of sheepskin, two kinds of calfskin, and one kind of cork. I am running the calfskin mostly, and it does eyebrow; I have found as high as 50 per cent of the ends down at the spooler guides from this cause. My sheepskin is eyebrowing worse than usual; the grade of the skins seems to have gone down.

G. F. Brietz.

"I would prefer the cork roll to anything to run on the spinning frame. I get no eyebrows with it, and as good a breaking strength and as even a yarn, and no experience with more ends coming down in cold weather. I run my roving traverse to get as much traverse of the roll as possible, and I believe you should use more weight on the cork. I ran a set of cork rolls about 11 months before taking them out to rebuff. I run the large roll in the front and the regular roll in the middle and back. And the clearers don't choke as much with the cork roll."

"We began changing about seven months ago, going from sheepskin to calfskin," reported D. F. Lanier, superintendent, Oxford Cotton Mills. "We had in mind the cost and the running of the work, as much as anything else." Mr. Lanier said, however, that in original cost, the calfskin was from 30 to 35 per cent higher than the sheepskin.

"We think, after six or seven months' trial," Mr. Lanier continued, "that the cork is going to be a little cheaper in the long run, and we are satisfied that the work runs better. As far as the quality of the yarn, or breaking strength and evenness, is concerned, I do not know that we are getting any advantage. We have the calf in back, middle and front. Our spinning is running better and we think the calfskin rolls are largely responsible for it."

Mr. Farmer said that, as overseer of carding, he had had some experience with cork rolls in the card room, encountering some difficulties. He said that on some of his frames he has plain bearings, without ball bearings, and that in rebuffing cork rolls on these the cork had buffed unevenly. He also said that cold weather affected the cork adversely, and that, on Woonsocket speeders, in order to keep from opening the rolls too wide, he had to put on a thinner shell of cork than would permit of satisfactory rebuffing and operation. He said, with regard to the effects of cold weather, that it was his impression that their overseer of spinning had substituted leather rolls for the cork on frames near the windows in order to prevent the effect of low temperatures on the rolls.

"We have been experimenting a little bit," said G. E. Moore. "We have two kinds of cork rolls, some are small and some are large; the small rolls do not work as well as the larger ones. So far as the breaking strength is concerned, I do not see any difference.

"We have those eyebrows, more of them on the calfskin, decidedly more. The clearers have to be cleaned off more often. I wonder why it wouldn't be a good idea to take off those troublesome clearer boards, anyway.

"It seems to me that the calfskin is more expensive. I believe I would rather have calfskin than anything if it didn't cost any more to start with." Mr. Moore then suggested the possibility of using an alcohol solution for treating the rolls, declaring that he had experimented with this in a small way and had found that it left the rolls clean and dry with no adverse effects so far as he could see.

Mr. Holt asked if anyone with cork rolls had gained consistently in breaking strength over sheepskin or calfskin. Howard Hart, superintendent, Durham Cotton Mfg. Co., said he had tried them for over a year on 40s to 48s, and could see no appreciable gain in yarn strength; he said he had more eyebrows, more flying, and did not get as clean a yarn, but that there was no loss in strength.

C. S. Tatum.

Mr. Crouch said, "I was talking to a man who has 25,000 spindles of long draft equipped with cork roll and he prefers cork. He said his cost was 80 per cent, and that his breaking strength on 26s came up four pounds after using the cork. I have never seen an eyebrow in three years on 12.75s filling."

"There is no question but that the clearer waste goes into the yarn, in using cork rolls," said Mr. Harden, "but I would rather have the cork rolls because they allow the waste to go into the yarn gradually instead of turning it loose in chunks. The only disadvantage is that you must turn the roll down to get the roll setting for short cotton; as well as the pressure of the flutes overnight causing ends to come down in the morning."

Mr. Davis, superintendent of Pilot Mills Co., said that with cork, running colored roving, he had encountered difficulty in changing from a coarse number to a finer count. Mr. Harden suggested that this might result from the use of a different type of dye on the stock, this having a different effect in the spinning. Mr. Vick pointed out that this trouble would arise in changing counts with leather rolls "unless you use the whole roll for the traverse."

In answer to a direct question from the chairman asking for preference of roll covering from the standpoint of cost alone, Mr. Harden said he would prefer

(Continued on page 129.)

# A Variable Speed Drive for Spinning

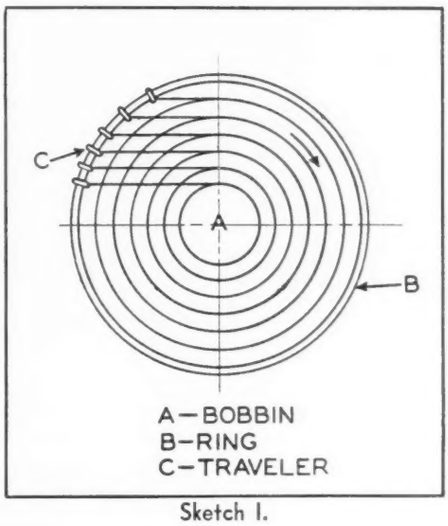
EVER since the introduction of ring spinning, efforts have been made to remove the restrictions imposed, as to quality and production, by the necessity of operating the frame at a constant speed. The limitations imposed by a constant speed are well known to the practical spinner, but a brief discussion here will be in order.

Production is based on the revolutions per minute of the front roll. As the yarn is delivered from the front roll it passes through the traveler and onto the bobbin, the twist being inserted in the yarn as the traveler revolves around the ring. The speed of the traveler is regulated by the speed of the spindle. As the spindle revolves it carries the traveler with it, but the friction of the traveler pressing on the ring causes the speed of the traveler to lag behind the speed of the spindle, resulting in the winding of the yarn on the bobbin.

This tension is greatest on the smallest diameter of the bobbin (See Sketch I) and gradually decreases as the diameter of the bobbin increases. This varying diameter results in a varying speed of the traveler, causing a difference in the twist inserted in the yarn.

It is well known that it is necessary in choosing a traveler to select one which will work best on the empty bobbin, or at the time when the greatest strain is on the yarn.

The varying tension on the traveler and yarn is also an important factor in figuring spindle speeds. A speed must of course be arrived at that will give the greatest efficiency when the tension is at its highest point, this being as stated when the bobbin is at its smallest diameter. With the necessity of constant speed, the speed of course cannot be increased as the tension on the yarn is decreasing as the bobbin builds up (See Sketch I); thus the full potential production of the frame cannot be attained.




Sketch I.

The quality of the yarn spun depends to a great extent upon keeping the diameter of the strand the same throughout. This diameter is governed by the action of the traveler in putting in the twist, assuming, of course, that even roving has been made. Any variation in the performance of the traveler directly affects the diameter of the yarn, causing uneven yarn with a consequent effect upon the breaking strength.

In view of these conditions, a recent development in the form of a new spinning and twister frame drive, which varies and controls spindle and front roll speeds automatically, is of interest, and will be described here. It is a product of the Reeves Pulley Company, Columbus, Indiana, and is an application of this company's variable speed transmission and vari-speed motor pulley.

The detailed description which follows shows the purpose of this new drive to be to provide an immediate change in speed for different yarn sizes; an automatic increase in speed as the bobbin fills; uniform tension on the yarn throughout the doff—to result in more even and stronger yarn, and greater production due to higher average front roll and spindle speeds. Engineering development of the drive was carried out with thorough test of it under operating conditions in a number of mill installations.

A detailed description of the construction of the drive and its method of operation follows, with the aid of the accompanying illustrations:

A sheave pulley of fixed diameter is mounted on the shaft of any standard stock motor, keyed and setscrewed as usual. (See Fig. 1.) The drive sheave, which is mounted on the cylinder shaft, is of variable diameter, and is shown assembled on the shaft in operating position.

The variable sheave is shown dis-assembled in Fig.

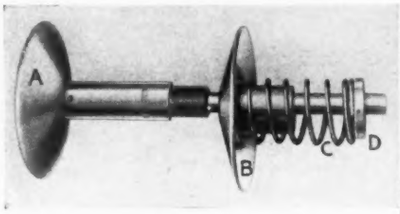



Fig. 2.

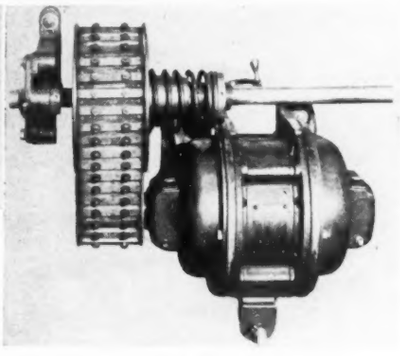
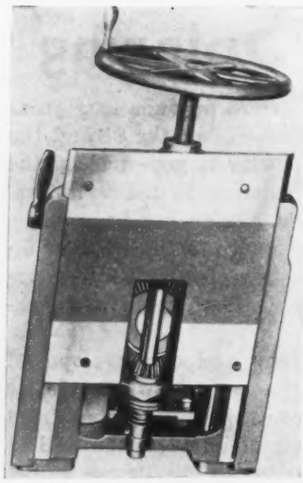
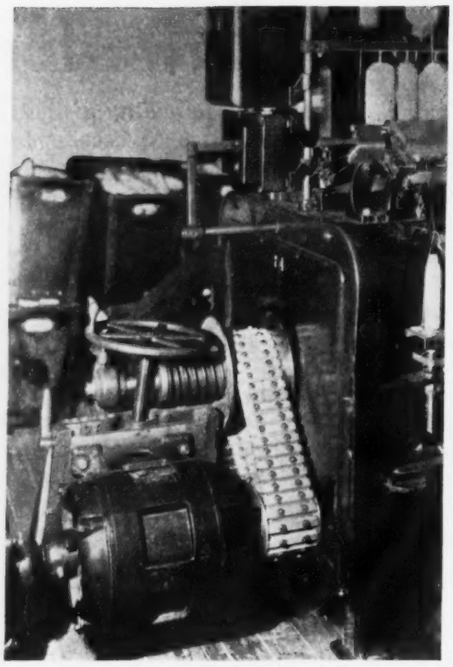


Fig. 1.

Fig. 3.





Above: Fig. 4. Right: Fig. 5, showing front view of drive . . .

2. From this it will be readily understood that the rigid disc *A* is placed on the shaft and held tightly by key and set-screws. Two driving keys are fastened securely in the extended hub of the rigid disc. Movable disc *B* fits over the extended hub and keys of the rigid disc and is held in place by coil spring *C* and spring tension adjusting nut *D* which screws onto the end of disc *A*. In the bore of sliding disc *B* are spiral lubrication grooves which connect with force-feed fittings in the end of the hub, through which the grooves are filled with semi-fluid grease, thus thoroughly lubricating the sliding disc, keys and extended hub. These are the only moving parts.

The belt—a complete endless V-belt—is made by bolting and riveting two sets of hardwood blocks (one above and the other below) to an endless belt body, the ends of these blocks being cut to fit the angle of the V-groove of the pulleys and tipped with leather. (See Fig. 3.) This is the same general construction used on the Reeves variable speed transmission for 35 years.

In addition, a strip of leather is inserted in a recess between the blocks, against shoulders in the blocks, glued to and clamped by the blocks, then dressed to conform to the angle of the grooves, to provide a continuous leather contacting surface completely around the circumference of the sheaves and adding to the gripping faculties.

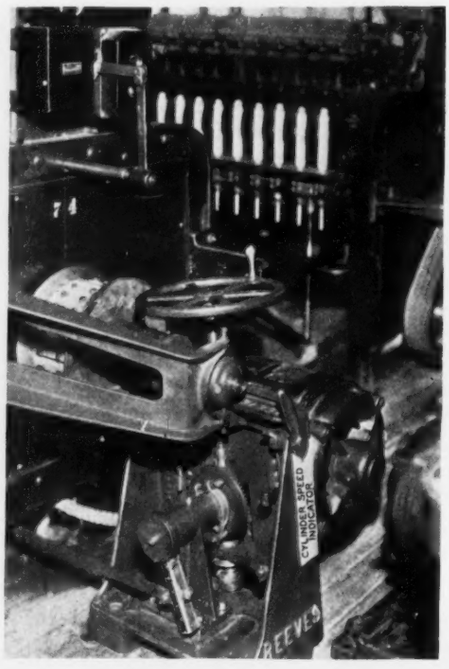
A sliding motor base with vertical mounting (See Fig. 4) permits adjustment of centers between the motor shaft and the cylinder shaft, by means of a shifting screw which is carried by a thrust bearing. The guides of the sliding motor base are set at an angle which keeps the center line of the V-belt straight and true at all positions of the belt in the variable sheave.

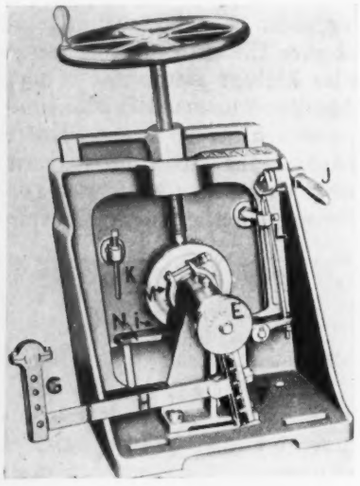
As the motor is moved downward, increasing the belt centers, the spring on the variable sheave is compressed, allowing the belt to run in a smaller diameter of the variable sheave, thus increasing the speed of the cylinder. When the motor is moved upward and the shaft centers reduced, the spring expands, increasing the diameter of the variable sheave and decreasing the speed of the cylinder. The spring tension is adjusted by the adjusting nut but should be just sufficient to start the frame without belt slip.

A front view (Fig. 5) and a back view (Fig. 6) are shown of a right-hand variable speed spinning frame drive of this type operating a long draft spinning frame with warp wind bobbins. This drive is equipped with a hand-wheel adjustment and automatic speed control. The cylinder speed range is from 800 r.p.m. to 1,500 r.p.m. (The drive is applicable with automatic control for either warp wind or filling wind frames.

### Description of Mechanism.

The automatic control of the speed of the cylinder during the building of the bobbin will now be described by reference to Fig. 7. (The mechanism shown here is for warp wind, another type of automatic control mechanism being used for filling wind frames.)




Above: Fig. 7. Left: Fig. 6, showing back view of drive . . . . . .

The arm of a specially constructed enclosed ratchet *E* is connected to the traverse shaft of the frame by arm *G*, which mounts on the traverse shaft, and connecting rod *H*. With each upward movement of the traverse the ratchet travels forward, turning the shifting screw to increase the speed of the cylinder slightly. The amount of increase for each forward movement is governed by the setting of the connecting rod connection on the ratchet arms *F* and *G*. These are adjustable to give the correct percentage of increase for any count of yarn.

A cut-out clutch *I* is provided by which the ratchet is made inoperative, when desired. This clutch can be cut out by hand by lever *J* or automatically by screw *K* as the sliding base moves down to a pre-determined position.

In the illustration, lever *J* is turned down so that the ratchet and automatic control are cut out. When the sliding base is moved up by turning the hand-wheel, pin *L* strikes the boss on lever *J* and turns it up, throwing the clutch into engagement. This locks the hand-wheel and places the ratchet in operating condition. Pin *L* is adjustable to throw the automatic control in operation at any r.p.m. of the cylinder that is required for any count of yarn on an empty bobbin.

The automatic control then gradually increases the speed of the cylinder, and with it the speeds of the rolls and spindles in precisely the same percentage, as the bobbin builds up in diameter. Screw *K* is set to strike the clutch lever *M* and cut out the automatic control at whatever maximum speed is correct for the count of yarn being spun. For example, the long draft frame shown in Figs. 5 and 6 was on 18s yarn. The starting speed of the cylinder on the empty bobbin was 1,160 r.p.m. Turn lever *J* down. With the hand-wheel, move the sliding base and motor up until the speed indicator pointer is at 1,160. Loosen set screw and move pin *L* up until it throws lever *J* up, and tighten set screw.

| Diam. of Bobbin Inches | R. P. M. Front Roll | R. P. M. Spindle | R. P. M. Traveller | Prod. Inches Per Minute |
|---|---|---|---|---|
| 1 | 116 | 10200 | 10085 | 364 |
| 1⅛ | 116 | 10200 | 10097 | 364 |
| 1¼ | 116 | 10200 | 10107 | 364 |
| 1⅜ | 116 | 10200 | 10116 | 364 |
| 1½ | 116 | 10200 | 10123 | 364 |
| 1⅝ | 116 | 10200 | 10129 | 364 |
| 1¾ | 116 | 10200 | 10134 | 364 |

TABLE I—Constant Speed

Assume 1,400 r.p.m. is the correct maximum speed of the cylinder, and this speed should be reached when the bobbin is approximately half full. Turn the hand-wheel to move the base down until the pointer is at 1,400, then adjust screw *K* down against clutch lever *M* until the clutch is cut out.

Set the connecting rod connection on ratchet arm *F* at 4, which will make the speed increase to 1,400 at the right time, at which point it will cut out and the frame will run at constant speed until doffing time. The doffer then turns down lever *J*, turns the hand-wheel until the lever is thrown up, completes his doffing, and the frame is ready to start.

Brake *N* is to prevent the shifting screw from turning and the sliding base from "coasting" or moving down from any other cause than the operation of the ratchet or turning of the screw by the operator.

While the cut-out clutch *I* is in, the hand-wheel cannot be turned, thereby preventing the speed being changed inadvertently.

When required, an outward bearing of the design similar to that shown in Figs. 6 and 7, with ball bearing and adjustable horizontally and vertically, is furnished.

In using the variable speed drive, it is customary to start on the empty bobbin at a speed lower than that used on constant speed under similar conditions of yarn number, etc.—gradually increasing the speed as the bobbin fills, to a maximum speed in excess of the ordinary constant speed. It is pointed out that on a constant speed frame, the tension on the yarn from the traveler is greater on the bare bobbin than on the full bobbin. This tension decreases as the bobbin fills. This, it is pointed out, is evident from the fact that more ends are down at the start of the bobbin than when it is half- or three-fourths full ("ends down" meaning end breakage due to the tension through the traveler and not breakage caused by slugs or waste accumulating behind or in the drafting rolls.) If this tension on the yarn through the traveler can be reduced when the frame is started on the bare bobbin, with less end breakage, it is explained, the idea of the variable speed is to increase the spindle speed and thereby increase the traveler speed so that the drag of the traveler, as the bobbin fills, will be constant and give a constant tension on the yarn; this increase in speed cutting down on the balloon of the yarn on the full bobbin.

It is pointed out that the complete drive, with the automatic variable speed facilities, requires no more space than a standard constant speed motor with belt or chain drive. The drive is applicable to twisters, also, for automatically regulating the speed of the twister to maintain uniform tension and twist and permit greater production.

The automatic feature for changing the speed of the rolls and spindles during a doff having been explained, it should be pointed out that in changing a frame from one yarn number to another, the drive and automatic control are changed simply by a turn of the crank, eliminating the necessity of changing pulleys, belts, etc.

An interesting compilation is shown in Table I and Table II. The calculations are based on 34s yarn. Table I shows the production results obtained with a frame operating at constant speed, from a bobbin diameter of 1-inch to a diameter of 1¾-inch; showing, with constant front roll and spindle speeds (and therefore constant production) the change in the relation of the traveler speed to spindle speed as the bobbin diameter increases. The production per spindle per week of 60 hours is 1.25 pounds.

| Diam. of Bobbin Inches | R. P. M. Front Roll | R. P. M. Spindle | R. P. M. Traveller | Prod. Inches Per Minute |
|---|---|---|---|---|
| 1 | 116 | 10200 | 10085 | 364 |
| 1⅛ | 122 | 10710 | 10602 | 383 |
| 1¼ | 128 | 11220 | 11118 | 402 |
| 1⅜ | 134 | 11730 | 11631 | 421 |
| 1½ | 140 | 12240 | 12147 | 440 |
| 1⅝ | 146 | 12750 | 12660 | 459 |
| 1¾ | 146 | 12750 | 12660 | 459 |

TABLE II—Variable Speed

In Table II, with variable speed the change in the speed of the front roll, spindle and traveler (and therefore in production) as the bobbin increases in diameter, is shown, with a production of 1.46 pounds per spindle per week of 60 hours. Also shown is that, by maintaining a uniform tension on the traveler, the variable speed maintains the same ratio between the r.p.m. of the spindle and the r.p.m. of the traveler throughout the bobbin.

The test reported in these tables was made on a frame which had been equipped with variable speed drive, and, for the constant speed data, the variable feature of the drive was made inoperative. This was done for the purpose of making a comparable test under the same conditions of roving fed, rolls, spindles, room condition, etc. In practice, as explained, the constant speed would have been greater than the lowest speed on the variable speed.

# Penetrants and Wetting Agents—Part Two

By Andrew J. Kelly
Burkart-Schier Chemical Co.

THE first installment of this two-part article, appearing in the April issue, listed the solvents most commonly used in wet finishing compounds. This second installment covers some of the other solvents, such as carbon tetrachloride, tetralin, trichlorethylene, and others. There is also a general summary and discussion on the manufacture and practical application of these agents. Clippings of the first installment will be furnished upon request. . . . . .

CARBON tetrachloride was one of the first commercial solvents to be used in the textile industry, but this was for hand spotting, and not in a soluble form such as the compounds we are discussing. The practice of direct spotting with carbon tetrachloride is still general; stains on cotton underwear, wool blankets, and other textiles are so removed. This solvent has never been used to any extent in soluble preparations for use in wet finishing, due to several factors that act against it. "Carbon tet" has a rather low boiling point (169 deg. F.) and it does not admit of easy incorporation to form soluble compounds. This latter objection can sometimes be overcome by the use of a mutual solvent; where the mutual solvent would not of itself be objectionable. Ethylene glycol monobutyl ether or perhaps cresylic acid will serve this purpose. The price of the tetrachloride is rather prohibitive, especially when the use of solvent is in volume per cent; for it has a very high specific gravity. Under certain conditions, carbon tetrachloride in the presence of moisture will form hydrochloric acid through hydrolysis. This possibility is remote in the concentrations in which the solvent may be used in any bath. "Carbon tet" is a handy solvent to have around, as its very common use testifies. It is also an A-1 fire extinguisher, and is being recommended for general use to replace Stoddard solvent in dry cleaning.

### Tetralin—Benzene.

While not enjoying a particularly heavy use in textile penetrant and wetting agents, tetralin (tetra-hydro-naphthalene) has a steady following and has had for several years. The soluble tetralin compounds most generally are boiling-off agents and kier assistants, rather than penetrants. It is a somewhat difficult matter to incorporate any amount of tetralin in a soluble compound, though this difficulty is overcome to some extent by the use of hexalin in combination with the tetra-hydro-naphthalene. Hexalin, we may notice, is in a class with the several other "mutual solvents" which have been mentioned. Tetralin is a good solvent for the natural waxes in vegetable fibers, and is hence often found in kier compounds for the boiling-out of cotton. A typical kier assistant would consist of stearic and oleic soap, tetralin, and sometimes hexalin. In favor of tetralin are its high boiling point (403 deg. F.) and efficiency in low concentrations; against it are a too high cost for very general use and an odor that is apt to be objectionable in open machines.

Benzene and its homologues toluene and xylene have appeared occasionally in wetting agents. These agents have not usually contained a considerable quantity of these solvents, and there have been cases where benzene was present in quantities only sufficient to lend its characteristic odor. One reason for this may be the difficulty of stable compounding of these solvents. They have good solvent properties, however, and have a boiling point sufficiently high to permit use in hot-dyebath penetrants. The somewhat noxious odor and the flammability of the benzene group is a drawback. At the present time there is no indication of any increased use of benzene and its related compounds in any of the prepared penetrant and wetting agents. This applies also to gasoline, kerosene, or to Stoddard solvent. Stoddard solvent (the dry cleaners' gasoline) is being used in combination with olive oil for soaking and spraying synthetic fibers.

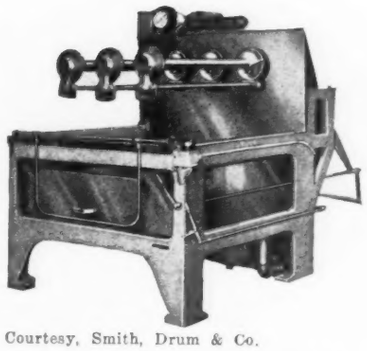
### Tetrachlorethane and Trichlorethylene.

Tetrachlorethane and trichlorethylene are members of the group of chlorinated solvents to which belong carbon tetrachloride, ethylene dichloride, and dichlorethyl ether. Tetrachlorethane is a heavy liquid with a high boiling point (297 deg. F.), and is an excellent solvent for fats and oils. Trichlorethylene is also a heavy liquid but has a much lower boiling point (157 deg. F.) Trichlorethylene is similar in action to carbon tetrachloride. It is a good solvent and spotting agent for greases, gums, (including chewing gum), tars, and resins. Both tetrachlorethane and trichlorethylene will dissolve sulphur readily and are used in vulcanizing. These solvents have not been in use for wet finishing long enough to predict their final position; both, however, do possess properties which are essential in any textile penetrant. The question is whether or not they possess advantages sufficient to justify their replacing certain other solvents now in use. This latter consideration will involve the matter of price as well as efficiency. The same will apply to any new solvent or penetrant agents offered to the industry.

### "Mutual Solvents."

Some mention has been made of certain agents which while perhaps not possessing in themselves solvent properties, enable the incorporation of larger quantities of some solvent than is otherwise possible. These agents have been dubbed "mutual solvents". No quantity of data concerning their specific use in textile preparations is available, though they are

used from time to time. Among these mutual solvents are ethylene glycol monobutyl ether, ethylene monomethyl ether, hexalin, and sometimes cresylic acid. In most cases a sufficient quantity of solvent can be incorporated by skillful blending with sulphonated castor oil or sulphonated red oil alone; and in some cases the amount of solvent present must necessarily be limited by the market price of the compounded article. These mutual solvents nevertheless afford an interesting field for study and we will probably hear more of them as time passes.



Courtesy, Smith, Drum & Co.

**Three-tube skein dyeing machine.**

In running over this list of solvent chemicals, there has been of course no possibility of completeness; partly because of the number of them, and partly because of lack of data in some cases. Many new and probably some old solvents have been omitted. There has been no mention of the several chemical agents that have been and are offered as soap and solvent substitutes. Nevertheless it is hoped that a general idea of the type and variety of solvents used in textile wet finishing compounds has been given.

### Actions of Solvents.

The sulphonated oil and solvent or soap-and-solvent compounds possess in general the properties of the incorporated solvents, though naturally not to the same degree as does the straight solvent. The general theory of the performance of these compounds is that the wax or oil present in the fiber attracts to itself the solvent in the bath in which the goods are immersed, and becomes diluted so as to take on some of the properties of the solvent—the mixture is taken up by the solutizing agent and held in suspension just as the solvent itself is held in suspension (or emulsion). The mill chemist or colorist, familiar with this theory, can readily see that the choice of a boiling-out or solvent agent should be determined by the duties which the agent will be called upon to perform. For instance, a boiling-off oil for cotton should contain a solvent for the natural waxes; while one for rayon should show good solvent and emulsifying properties toward the oil always present. A high percentage of solvent in the compound is always desirable, though there are a few needful solvents which do not permit this. High per cent of solvent means high cost of penetrant, but the economies of operation more than compensate for the added price.

### Using Solvent Compounds.

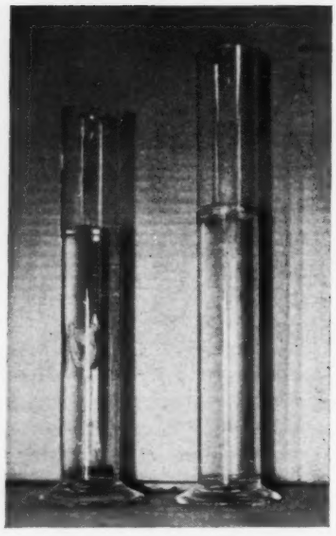
Where a solvent compound is to be used as an assistant in spot removal, it is well to first determine if possible the nature of the spots or stains. This is often difficult, for the source (and hence the remedy) of these nuisances is often more fugitive than the most fugitive of dyes. Spots troubling the textile colorist generally belong to one of these classes: oil or grease stains, calcium and magnesium soap spots, and "X" spots, these last being of unknown origin. Sometimes it seems the "X" spots outnumber all the others. In the removal of grease, oil, or any fatty matter, a preparation containing a good percentage of an approved oil solvent will be of aid. Best results are obtained by running at a temperature of 180 to 210 degrees Fahrenheit (when possible)—this calls for a solvent of fairly high boiling point. Good agitation is essential, for friction is perhaps the greatest cleanser of all. The use of one quarter to one half of one per cent of soda ash or trisodium phosphate is a help, as it will tend to open up the fibers of the goods and will aid in the emulsification of the removed impurities. Few indeed are the spots which will not yield to a hot well agitated bath containing solvent, sulphonated oil (or soap), and a mild alkali.

Concerning the detergent action of various mild alkalies some valuable data is given in a recent article by Rhodes and Bascom of Cornell University.* They found that sodium carbonate (soda ash), trisodium carbonate, and sodium hydroxide (caustic soda) each showed its maximum detergent action in a solution with a pH of 10.7. Where stains must be removed from dyed goods where it is essential that the shade not be damaged or changed, lower temperatures and less (if any) alkali must be used. This may be compensated for by increasing the per cent of solvent agent or the time of running, or both. It takes only a little observation to detect which solvents have an adverse effect on shades. Often, while cleaning greasy or oily goods a thin oily film appears on the surface of the bath, showing that the oil removed from the goods is present in too great quantity to permit total emulsification by the cleansing bath. This film should by all means be run off by flushing the machine; otherwise, when the bath is run down the oil will redeposit on the boiled off goods. Ordinary dirt or mill accumulation is easily removed in the boil-off bath, and usually permits efficient operation of the one-bath method of boiling off and dyeing. This procedure is greatly aided and expedited by modern wetting agents, and in fact the speedy one-bath method has grown in favor with the growth of the use of these soap and solvent compounds.

The insoluble lime and magnesium soap spots present a difficult problem in spot removing; they are more easily prevented than removed. Sulphonated oil and solvent combinations are very practical for use where hard water must be contended with. However, where the insoluble soap spots are present and must be removed, it is best to first give the material the same treatment practiced for general cleansing.

*"Effect of pH upon the Detergent Action of Soap," by F. H. Rhodes and C. H. Bascom, Cornell University, Ithaca, N. Y. (Am. Dyestuff Reporter, Aug. 31, 1931.)

This will sometimes be all that is necessary, especially if a little extra soda ash or trisodium phosphate is used. When other methods fail, the judicious use of formic or acetic acid in the bath will break down the insoluble soap, yielding a fatty acid and a formate of acetate salt. The fatty acid will float on the surface of the bath while the salt is soluble and will rinse out. The bath should be flushed over the top of the machine to remove the floating fat, then run down and goods rinsed several times. Two or three per cent of sulphonated castor oil may be used in the last rinse to soften and improve the handle of the goods. This practice of using acid for removing insoluble soap spots requires care in operation and a knowledge of the action of mild acids on the fibre at hand; it is, however, a very positive method. Whenever soap and alkali or sulphonated oil and alkali are to be used, it is well to add the alkali first and see that it is dissolved before adding the other ingredients; this conditions the water. Such practice is especially advisable for hard water conditions.



Old and New Methods of Testing Wetting Agents. In one case the yarn is immersed in the wetting solution; in the other it merely rests on the surface . . . .

### Testing for Effectiveness.

In most of the literature concerning wetting agents, mention is made of the customary test used to determine the effectiveness of these agents. Briefly stated, the procedure for this test is as follows: In two beakers measure equal quantities of plain water. To one add a small amount of the wetting agent at hand. Prepare two equal hanks of yarn. Simultaneously drop into each beaker one of these hanks. In the beaker containing the wetting agent the hank sinks quickly. In the other beaker the hank, if it were of untreated cotton yarn, is floating yet. This test may also be used to compare a new penetrant against a standard (or one that is known to be satisfactory). It is fairly good for a rough comparison, where speed rather than accuracy is an object. Otherwise, the method proposed by Drs. C. Z. Draves and R. G. Clarkson of the du Pont Company is very much superior, though naturally somewhat similar. To quote these gentlemen: "The method, briefly, consists of measuring the time required for a 5-gram unboiled skein of gray 2-ply cotton yarn to sink in a solution of the wetting agent, where the skein carrying a 1½-gram sinker is held below the surface of the wetting solution by a heavier weight called the anchor."** Note that the skein is held *beneath* the surface of the wetting solution, and is not left to float on top where it will almost certainly draw over to the side and adhere to the wall of the containing vessel. This method offers a standard whereby results may be recorded and checked against results obtained at other times from other agents.

It has been the effort in the preceding paragraphs to record some data concerning individual penetrant and wetting agents and to indicate, where possible, special properties of each. In the final analysis, it is the man in the mill who will pass upon the practicality of each item, regardless of the claims of the manufacturer. The individual textile chemist and colorist may not wish to experiment, but nevertheless the dyehouse and bleachery is the final proving ground for every new penetrant and wetting agent offered; it is there that each prospective consumer d e c i d e s whether or not the new product is of advantage to his mill—and the accumulation of these decisions forms the verdict of the industry. And if the dyer is to exercise some intelligent control over the products to which he extends a practical test in his mill, he must have a general familiarity with these solvent compounds and their elements. If some few bits of information along this line are here present, this paper serves its purpose.

**"A New Method for the Evaluation of Wetting Agents," by Dr Carl Z. Draves and Dr. R. G. Clarkson, E. I. du Pont de Nemours & Co., Inc. (Am. Dyestuff Reporter, Mar. 30, 1931.)

Acknowledgement for literature furnished is made to the following: Carbide & Carbon Chemicals Corp.; Hercules Powder Co.; Newport Chemical Works, Inc.; and Roessler & Hasslacher Chemical Co.

## Cotton-Textile Merchants Endorse National Cotton Week.

At a regular meeting of the board of directors in April, The Association of Cotton Textile Merchants of New York, a resolution was unanimously adopted, giving wholehearted endorsement to the second annual celebration of National Cotton Week, May 16th to 21st. In commenting upon the resolution, Walter S. Brewster, president of the Association, said: "National Cotton Week is more than a week devoted to the advertising and selling of more cotton goods. In the late spring and early summer, good merchants are accustomed to featuring cotton products of all types and descriptions because there is a greater variety of their natural uses. Developing this sound mercantile practice to a veritable nation-wide fair where the consumer can inspect and select for his gratification, the choicest patterns and styles from our looms, is an accomplishment in which all branches of the industry can rejoice together.

"The Association of Cotton Textile Merchants of New York, representing the selling end of the primary cotton goods manufacturers, is proud of its share in the initial occasion of National Cotton Week last year. The increased sales by wholesale and retail merchants were direct witness to the public's enthusiastic response. More important, in terms of future progress, was the fostering of a better mutual understanding between manufacturers, selling houses, converters, and merchants, through a common and magnificent merchandising effort. Our members are gratified with the sincere and wide-spread approval already shown by mercantile houses this year, and will do everything in their power, individually and through the Association, to better last year's signal success."

# How About Your Waste House?

**READ THIS ARTICLE and then ask yourself if you really know as much about your waste and waste-house as you should—and then act accordingly. But don't be too sure you should be satisfied until you have given careful consideration to the points mentioned in this very interesting discussion.**

**We hope later to present a detailed and illustrated description of an up-to-date waste house in a prominent mill, together with the methods used.**
**—The Editor.**

THE WASTE HOUSE of a cotton mill is ordinarily understood to be that part of the mill to which the waste made in the mill is carried to be properly stored and baled for shipping. But the waste house means one thing at one mill and an entirely different thing at another.

At one mill the waste house may be as clean and orderly as any department of the mill, with a good man in charge of it and with neat bins properly marked for the reception of each kind of waste received from the mill. It will be swept daily, and as fast as a bale of any kind of waste has accumulated, it will be put up, properly marked or ticketed and put in its proper place until the shipping day shall arrive. The head waste man will examine every lot of waste received from the mill to see that it is standard and not mixed with any other kind of waste. If he finds mixed grades he will not allow the lot to be put into the bin, but will get the overseer to look it over and have it properly picked. No boxes, barrels, piles of junk, extra machine parts, piles of scrap lumber or anything else will be allowed in the waste house, but it will be kept solely for the purpose for which it is intended, the proper handling of cotton waste made in the mill.

At the other extreme comes the waste house which is a nightmare of rubbish, containing mixed grades of waste which should have been assorted before leaving the mill—the burial ground of many mistakes and carelessness in manufacturing. At this mill, "knock it off and send it to the waste house" is an almost daily order of someone of real or fancied authority. No one pays any particular attention to what is done in the waste house, and bad work, carelessness and sabotage are buried under the head of waste.

There is only one proper way to think of and use a waste house and that is as though it were a department of the mill, which it really is, and entitled to as much care and consideration as any other department. It should be visited at least daily by the superintendent and every overseer so that all may know that the waste house is getting its raw material in proper shape for turning out its finished product, which should consist of neatly baled and labeled packages of each grade of waste properly assorted.

The importance of the proper separation and baling of the various grades, unmixed with any other kind of waste, can only be appreciated when one has at least a general understanding of the purposes for which these grades are used. If a mill is using Strict Middling cotton and receives several bales of Strict Low in a shipment the card room boss and superintendent will go up in the air, but often they will resent a complaint that a shipment of card strips has a lot of card fly mixed in the bales.

For the general run of mills the grades of waste shipped will be as follows: dirty motes; clean motes; dust house; card fly; card strips; card sweeps; clearer waste, spinning sweeps; clean thread; oily thread; hard slasher; weave sweeps; rags; dirty rags; seams; thrums.

Dirty motes come from the bale breaker, vertical opener, horizontal cleaners and cleaning trunks. At many mills dirty motes have no value and must be hauled off. Many times their disposition is a problem, but as they make excellent fertilizer when well rotted, many farmers are glad to haul them off if they get them free. At times the value of dirty motes is such that the waste dealer will run them through a willow and save enough good motes to pay for the expense.

Clean motes find their greatest use in upholstery and many of our finest over-stuffed living room suites and chairs owe their comfort and good appearance to clean motes.

Dust house waste has little value if the pickers are working properly and often the expense of baling it is greater than the price received. Some mills dump it at all times.

Some mills have quite a bit of good staple going into card fly and when that is the case this can be separated and used in waste spinning grades. Ordinarily, the trash from under the card has about the value of dirty motes, being mostly leaf and bits of stalk and boll.

Card strips are used for spinning low grade yarns, so are card sweeps and spinning sweeps used for this purpose.

Clearer waste comes from the clearer roll of the card and from the top clearers and bottom clearers on the drawing frames, fly frames and top clearers of spinning. This waste being very short staple and usually bright and clear is used to a large extent in felting, and many of the hats which we think are all-wool felt have their share of clearer waste mixed with wool.

Clean thread waste is usually run through a garnet machine and used again for spinning, though some is sold for wiping waste.

Hard slasher waste goes mostly to the mop trade. Weave sweeps have a low value at all times and at present dealers care very little for them. They go mostly to the pulp mills. Rags and seams and

thrums are torn up and go back into yarn again at the low grade yarn mills.

Where a mill runs colored work, raw stock or indigo, many or all of the previously mentioned grades will be duplicated and must be kept separate from the corresponding grey shades.

While the proper handling of waste in the waste house is necessary in order that the mill may receive the largest possible return in money for it, the end sought in all good mills is the reduction of waste to the lowest point possible consistent with high quality product. It is a mistake to leave in the work trash and staple that will lower the value of the mill's finished product, just as it is a mistake to take out good staple that might well go into the goods. To maintain the equilibrium between those two evils requires constant care and watchfulness on the part of superintendents and card room men.

A mill treasurer once told the superintendent of the mill that if the waste made could be reduced by one per cent, the saving would go a long way toward paying a dividend. Let us see just what that saving would amount to in the case of a mill using, say 50,000 pounds of cotton per week, or 2,500,000 pounds per year. The one per cent saving in pounds would be 25,000 pounds of cotton, the value of which can easily be figured at the present market price. However, figured at 15 cents per pound, the amount that could be added to the right side of the ledger by creating this saving would amount to $3,750. If the value of the labor expended on a large part of the waste were to be added, the sum would be considerably increased.

Let us assume that this same mill has twelve per cent of salable waste, or 300,000 pounds, and that it were to get an average of even five cents per pound for it, the total return then would be only $15,000. It is thus easily seen that efforts toward waste reduction may become highly profitable and that systematic efforts alone will bring about an economy.

It is not the purpose of this article to go into the settings of machines for reduction of waste, but rather to take into consideration the human element which plays such a large part. The greatest responsibility rests upon the superintendents and overseers who are to think, watch, advise and train those under them until there exists throughout the entire organization a will against making waste. Into the category of wastes, comes the waste of excess labor, the waste of acidents, the waste of labor turnover, the waste of sabotage, the waste of supplies, the waste of ignorance and superstition, the waste of bulldozing and fear, along with a host of other wastes that are continually present and go to add to the visible that can be seen and sold.

A good example of ignorance or carelessness on the part of a superintendent is illustrated by the superintendent who had been upon his job for several months and upon being told that there was a fire in the dust cellar, asked, "where is the dust cellar?" How could such a superintendent know whether or not his pickers were working properly if he had never looked inside to see what kind of waste was being blown below?

The average cotton mill operative is a reasonable person, and upon being shown how and why, provided he entertains no fear of petty persecutions on the part of his bosses, will try to do what is right. The business of showing them how and why is a matter of training that must never slacken, but must be kept up daily and hourly. This is why labor turnover is such an expensive waste, as the placing of a new hand on a job takes the time and attention of some one to train him until he does the job satisfactorily.

A fixer on drawing frames comes in on "Blue Monday" with a headache and grouch and about ten o'clock the best drawing tender walks out. A new hand is put on the drawing and the next day or two see the picker laps split and the breaking strength of the yarn go down. The reason was that the new hand, as a result of excessive waste made, caused the waste machine to run overtime and the bale breaker man reported nothing about excessive drawing sliver waste, but just ran it all in. And as the overseer of carding had no system of checking up on waste and had not been to the bale breaker room, he did not catch the trouble, but let it catch him.

And all along the line such things go on—doublings and singlings, long-tailed piecings, bands not properly tied on, spindles skipped by oiler, travelers mixed, spooler bands off and many slack warpers not knocking off, slasher too hot or not drying properly, feelers not properly set, looms out of time, wrong draws, folder giving short lengths. Waste, waste, waste!

Not all of these will be found in any mill at one time, but sooner or later these and many others will come along and take their toll. They are like Saint Paul's "thorn in the flesh," and like the poor—always with us. And the only remedy is quiet, consistent, well directed thought, effort and foresight, for they can be brought to a workable minimum, but oh boy! it's a man's job.

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## Martha Mills Using Carolina Cotton for Tire Cords.

Certain Carolina cotton from the last crop has shown sufficient improvement in quality so that it is now going into tires and other products manufactured by The B. F. Goodrich Company, Akron, Ohio, it is announced by Charles Thompson of Martha Mills, textile division of the Goodrich company at Silvertown, Ga.

A quantity of Carolina cotton has already been purchased by Martha Mills, there to be fashioned into fabric which later will find its way into goods manufactured at the Goodrich plants in Ohio, California and other parts of the world.

Carolina cotton is being bought, Thompson says, because of its improved qualities this year. Constant search is conducted to find the finest cotton grown for the purpose of tire manufacture.

Goodrich, the pioneer company in the tire industry, manufactures 32,000 articles in 1000 distinct lines and under normal conditions uses 100,000 or more bales of cotton annually.

The Goodrich mills at Silvertown, where "weftless" cord tire fabric is produced, operate 80,000 spindles and is one of the largest plants of its kind in the South.

# CURRENT TOPICS

## Talk of the Month.

### The General Situation in Textile Markets.

RAW COMMODITIES figured large in the development of the long depression and now it looks as though they may be the mainspring of recovery. Months ago it would have been figured that demand for finished goods was the chief hope for emergence from the depression and that commodities would be lifted out of the rut through the force of demand, even before surpluses were greatly reduced. But with the complications of international economic and political imbroglios, the financial distresses of one kind or another and the consequent stifling of consumer buying, the uncertain commodity price position remained, well into the second quarter of the year, an obstacle to such healthy speculative buying as would follow on a definite assurance that the bottom was reached.

For want of urgent demand from buyers of raw material to meet similar demand from consumers of finished goods, the only way out of the distressed situation apparently is the assurance of an adjustment of supply to demand—the elimination of heavy surplus stocks—which will provide the foundation for steady, and eventually much higher, prices. There is much evidence at last to indicate real progress toward this desired end and one of the commodities which shows this is raw cotton. Wheat is another and these two rank high as factors in the American economic situation in general, particularly as they are so important as being leading export commodities.

In the metal trades, rubber, sugar, coffee and, among the textile fiber rayon, the supply is a matter of human control more than in annual crops where Nature takes a hand. The natural factor looms large today as a corrective of conditions in wheat and cotton. Late in March George A. Sloan, president of The Cotton-Textile Institute, said that developments in the industry during the next few months should constitute an important step in the reconstruction of basic industries. It is significant that raw cotton since October has exhibited greater stability than perhaps any other commodity.

Absurdly low prices, coupled with drastic measures for control of production, are working toward relief in other materials, but wheat and cotton already show clear tendencies toward a healthy relationship of world supply to demand, chiefly through growing shortages of foreign supplies. On top of that, the prospects favor considerable reduction of the domestic yields in 1932. The winter stability in cotton was based on relative scarcity of foreign growths, with larger exports of American in consequence. Only the lack of better general business conditions prevented cotton from occupying a distinctly stronger position. The domestic crop indications for wheat have already become bullish. In cotton, even if the acreage reduction were small, the yield would be reduced further by lessened use of fertilizer, while the law of averages is against anything like the yield per acre of 1931.

This is the silver lining of the economic cloud which shadowed the business world at the start of the second quarter of 1932. Cotton spinning activity in February had been at 92.5 per cent of capacity, on a single shift basis, but March brought a repetition of the discouraging spring of 1931, leading to plans for renewed curtailment programs because the business was insufficient to keep the machinery going as it was. The general disappointment in basic lines of business over the failure of spring once more to bring relief was reflected in the momentous bear movement on the stock exchanges, which exerted the controlling influence over the cotton and other commodity trends, yet this staple resisted the pressure more than did most others.

It was a good sign, too, that more concerted efforts than ever before were taken by cotton manufacturers to adjust operations to indicated demand as soon as the need became manifest. In fact an outstanding phase of things throughout the textile industries was the broad and prompt movement to make necessary curtailment, after these industries had run for several months at a good rate relative to general business. One benefit of the drastic long depression may be the final inculcation among industrialists of the lesson of necessary broad control of output for the good of all. The advices from the goods markets convey the knowledge that other branches of textiles are taking a page out of the book of wisdom in the cotton branch, or writing a chapter of their own such adjustment.

Much confusion naturally was eliminated by the Congressional abandonment of the proposed manufacturers' sales tax. The move for a National Quality Integrity Guild has held much prominence in recent trade discussion, being a reaction to prevalence of shoddy merchandise in all lines which seem to have proved somewhat of a boomerang. Once more it may be emphasized that stabilization of prices does not mean holding a certain level and it appears that, in a great many cases, quality merchandise has suffered because it was not reduced proportionately to the cheap lines in accordance with the reduced purchasing power of the consumer or lessened cost of production. The abnormal spread between the two classes emphasized the call for cheap merchandise and now a double effort is necessary to restore buying of quality.

Quality, reasonably priced, should promote a demand when intrinsic values are low as when they are high. The manufacturer who skimps on quality to make a price to meet the public demand for low costs

# Style Show at N. C. Textile School

THE annual style show and students textile exposition was held by the textile department, N. C. State College, Raleigh, N. C., on April 22nd.

Seventy-seven young ladies from five North Carolina colleges participated in the style show, modeling coats, coat suits, sport suits, dresses, beach pajamas and negligees, made from cotton and rayon fabrics designed and woven by students in the textile school, and made into garments by the young ladies themselves. Suitable prizes for the best costume in the group, and from the five schools, were awarded.

The upper photograph shows the entire group modeling in the style show, and indicates the variety of fabrics designed and woven by the textile students and worn by the models. The grand prize winner was Miss Nell York, of Meredith College (third from left in lower photograph). Reading from left to right: Miss Kearney K. Smith, Catawba College; Miss Ellen Matthews, Louisburg College; Miss York; Miss Estelle Farris, Meredith College; Miss Blanche Coley, Queens-Chicago College; and Miss Anna Green, Peace Junior College. These young ladies were awarded the prizes given to the entrants from their respective schools.

The Students Textile Exposition room contained examples of spray printing, fancy half hose, yarns, a large display of fabrics, and other materials produced by the boys at the textile school.

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would seem to be doing that at the worst time when values of everything are low. From a reasoning standpoint, the excuse for offering cheaper quality logically would come when costs of manufacture were getting so high that the public could not be expected to pay the freight for quality. Meantime, whoever is to blame for the diversion from quality which has been generally disastrous, the thing now is for all to turn attention to correcting the situation, as stated by P. A. O'Connell, president of the National Retail Dry Goods Association.

### New England Mill Situation.

IT IS unfortunately true that the hopes of early 1932 for business in general this spring and consequently for cotton goods were not realized. It is fortunate that New England cotton manufacturers were not carried away by false hopes. They pursued a cautious policy which time has shown to have been altogether wise. The second quarter got under way with wholesale and manufacturing lines of all kinds showing little improvement. The wool manufacturing industry, centered in New England to a major extent, had a severe setback this spring and other textiles, with cotton, have dragged. The price situation was favorable for cotton yarns and cloths, however, to the middle of April. This circumstance naturally could be traced to the policy of refraining from accumulating stocks.

New England operations, which are estimated to have been the most conservative in fine-goods production ever known, and the recent plans of the southern print-cloth mills for extension of drastic curtailment, are significant of a determination throughout the cotton industry at last to conduct manufacturing on a thoroughly practical basis. The facts are the foundation, and not the hopes of improved business. If manufacturers refuse to operate on the basis of prospective orders until buyers are willing to purchase on that same basis, the industry will progress in an orderly and healthy fashion toward new prosperity. It is a safe wager that buyers will be cautious pending signs of loosening up by consumers.

At a recent meeting of the Massachusetts Laundry Owners' Association, Robert Amory, treasurer of the Nashua Manufacturing Company, made some interesting comments on colors and fabrics of American cotton mills. Another speaker, P. A. O'Connell, president of the National Retail Dry Goods Association, spoke on the prevalence during the past year of cheap cloths and who was to blame for them. The remarks of Mr. Amory are particularly pertinent in view of the statements by Mr. O'Connell, who found the blame for the run of cheapness difficult to pin down to one source, but characterized it as costly to the consumer. The quality fabric or garment, he asserted, gives "an additional amount of useful service far out of proportion to the small difference in initial expense".

Eleven years ago guaranteed fast colors were such a novelty that distributors questioned whether the public would pay a few more cents for them, said Mr. Amory. Today the American mills lead the world in such colors and the consumer demands

them. "'There are plenty of good cotton fabrics on the market," he said, "'made with fast colors and honest finish; in fact I think the majority of cotton fabrics are so made." It may be added that it was just about a decade ago that the mills in New England began to place special emphasis on style and design, a thing which has contributed to giving the cotton fabrics of the region their high place among the textiles in vogue of recent seasons.

Another point made by Mr. Amory was that "the only way for the consumer to be certain is to buy fabrics under the manufacturer's name. I believe the garments should contain the name of the maker and, where possible, the name of the fabric manufacturer also. Reputable manufacturers will always stand behind their product." In this the speaker stressed a point which has been given much consideration in recent years by New England manufacturers and they are now reaping the reward in various cases of having arranged to carry the identity of their fabrics right through the garment to the ultimate consumer. The ability of manufacturers to combine specialization with high quality has been another saving grace.

Three prominent companies in this district have almost simultaneously cited the advantages of their trade-marked lines when distributed as such to the ultimate consumer. As stated in a report of the Pequot Mills, "large numbers of stores throughout the country continue to use famous trade-marked products of New England mills as a magnet to draw attention to other goods on sale." The Pepperell Manufacturing Company reports that, as the result of a nation-wide survey to determine the major factors in selling domestics during 1932, "national brands, sheet size, guaranteed sheets and special promotions head the list by a wide margin". An interesting idea in the promotion of a trade-marked line of apparel from cotton is the use by the Wamsutta Mills of New Bedford, the Whaling City which has become the fine-goods center of the country, of a famous old bark for display.

Among the changes in New England mills of late, is the resignation of Ward Thoron as treasurer of the Merrimack Manufacturing Company, the first American organization formed for the purpose of printing calico and first of the Lowell plants. Mr. Thoron had been treasurer since 1920. He is succeeded by Herbert Lyman, treasurer before from 1908 to 1920 and vice-president since. Mr. Thoron and Hon. Charles Francis Adams resigned as directors. John S. Lawrence was elected to the board.

As a sequel to the reports late last year that the Pequot Mills might move its Danvers Bleachery from Peabody to Ipswich, it was recently announced that the company has decided definitely against such a change this year. Another organization which was dissatisfied with conditions pertaining to taxes is the Ashland Corporation of Jewett City, Conn., which closed its plant for a month, but reopened on promise of revaluation of property. The Manville-Jenckes Company is now consolidating its Pawtucket plant with its Manville Mills at Cumberland, R. I., prompted, it is said, by the desire for relief from tax charges. A small portion of the Pawtucket mill machinery, it was stated, will go to Gastonia. In the machinery end, the Crompton & Knowles Loom Works are reported to be consolidating plants, too.

At this writing, the situation at the great Amoskeag Manufacturing Company plant in Manchester, N. H., is in doubt. As in the case of the Langley Cotton Mills Company, at Langley, S. C., the employees have found themselves losing work as the result of their refusal to co-operate with the management in the extremity of unprofitable operation. The refusal of the workers to accept a reduction the first of April was followed by drastic curtailment of operations, which led to intercessions by the local Chamber of Commerce.

### Exports of Cotton.

DURING the first six months of the present season mills of the world used 2,851,000 bales of Indian cotton against 3,071,000 a year ago, and 3,281,000 two years ago, according to the New York Cotton Exchange Service. This fact does not mean that the world is using less cotton, but simply means that it is using more American cotton, less Indian cotton.

The Orient is using far more American cotton than ever before because, with cheap prices of American cotton combined with the quality that this year affords, better money values are found in American cotton than any other staple grown.

Exports of cotton from the United States during January and February were larger than for the same period in any year since 1927. They were about 21 per cent larger last year and 12 per cent above the 1929-1930 season.

The export movement of domestic cotton has doubtless been a stimulant in the raw cotton situation.

Cotton consumption in the United States during the first half of this season increased 6.8 per cent compared with the same period last year; Great Britain increased 24.2 per cent; Japan 12.5 per cent; Germany 12.1 per cent; Italy 1.8 per cent and India 7.5 per cent.

There is still a large carry-over and any unusual increase in prices of raw cotton cannot be expected soon.

### Production Control and Distribution.

PRODUCTION control and distribution seem to be the two giant monsters that rear their foreboding heads and disquiet a textile industry that so much desires a little surcease from its sorrow. With maximum spindles in place having been drastically reduced and with active spindles still greater reduced the production threat is again a problem; although a short while ago it seemed that insofar as the print cloth group, the narrow sheeting group and the various yarn groups were concerned, it had been solved.

The selling agents of New York have recently met and suggested to the print cloth manufacturers that a further curtailment of 33⅓ per cent should be enacted at once and remain in force until a more positive relief is secured.

The attitude of the buyers of cotton textiles is still that of bargaining. There seems to be little hope of stability in the price of any commodity. The buyers still bid and shop and play one organization against the other. Manufacturers were already much curtailed but with a production still seeking for a demand, frequently became panicky and took orders below any reasonable price that should be received.

There is still a certain amount of skepticism and doubt in the various groups, which at the present time seems to be augmented by the general lack of confidence in the business situation. Business has never progressed except on the basis of confidence and common-sense and until these two factors can be incorporated a floundering policy of uncertainty will exist.

## Comment on the Cotton Market

**New Orleans, April 14th, 1932.**

UNTIL of late the cotton market was more or less under pressure during the past month, for while there were periodical bulges, offerings were free on spurts and served to keep values on the down grade until recently. In early April Middling cotton in New Orleans was down to 5.97, recovering somewhat meanwhile, but compared with one month ago, today's quotation—6.37 versus 6.80—shows a depreciation of $2.15 per bale.

While the depression during the period was due mainly to the further depression in Wall street and the uneasiness caused by the defeat of the sales tax proposal in Washington, and the difficulty experienced in efforts to balance the Federal budget, the decline was partly attributed to the uncertainty as regards the disposition that the government may make of its large surplus stocks of raw cotton. Other depressing features were larger acreage ideas than were entertained earlier in the season, the contemplated increase of federal taxes on stock and commodity sales on the exchanges, and talk of further curtailment in the print cloth mills, as well as a less urgent demand for spots in the South.

The recent Senate investigation to discover the character of late selling in the New York stock market had only a temporary beneficial effect on sentiment and the market, as it was said that the selling represented liquidation.

That is no doubt that the private preliminary returns indicating farmers' intentions to seed more land to cotton this year than was expected earlier in the season, had a depressing effect on the cotton market, as the trade is mindful of prospects for a record world's carry-over of American cotton at the close of this season; July 31st next, perhaps 12,000,000 bales or more of lint versus 8,710,000 at the close of last season.

### This Season's Indicated World's Supply of American Lint Cotton.

On the basis of last year's world's carry-over of American lint cotton and this season's final ginnings, the world's indicated supply of American lint cotton for this season is very large, viz:

| | |
|---|---|
| World's carry-over of American lint. July 31/31 | 8,710,000 bales (Hester) |
| Total ginnings, counting round as half bales | 16,595,780 bales (Census) |
| World's indicated supply of | |
| World's indicated supply for season, about | 25,305,780 bales |

On the basis of the world's indicated supply of American lint for this season, and if the world's consumption of American lint this season is 13,000,000 bales, the world's carry-over of American lint cotton at the close of this season would be about 12,305,780 bales versus 8,710,000 at the close of last season, thereby establishing a new record by a big margin.

## "Get Back on the Rail!"

A NATIONALLY known engineer recently stated that in his opinion, the executive management of the leading banks of our nation, in fact, the leading industries of our nation, will be changed within the next few years, because those in charge at the present time will prove themselves to be incapable of regaining the confidence necessary to carry the world financially and industrially.

He stated that in his construction work he had often seen steel workers walk 4-inch beams 400 feet in the air on windy days as nonchalantly as though they were on the sidewalk of the street below.

These men are valuable and fearless until something unusual happens in their altitudinous position which gives them an awful fright. After that they are never able to work far from the ground. Their ambition to ascend to heights necessary to carry on may be ever so strong, ever so determined, but when they begin to make the ascent that awful, uncontrollable fear slows them down and makes them work close to the ground.

This engineer's parallelism indicates that American business must be carried on in high altitudes and that many of our valuable and constructive leaders in banking and industry during the last few years have received such a shock that they will never be able to carry on in financial heights necessary in future progress.

Therefore, a newer and bolder type of man, who knows perhaps no more than these worthy men, but who lacks the fear of the shock, will hove to come in.

This statement is exemplified very forcefully in the attitude of the National Congress in planning the tax budget. It is exemplified in the reaction of the nation to the measures enacted. It is exemplified internationally by a certain type of international mob psychology of frenzied finance that has swept over the world.

American business is sound, American investments are secure, American credit is unexcelled—all of the means necessary to advance to a position of safety and security are evident—but the shock of the man who wobbled 400 feet in the air prevents the average business man from going back into his working position and putting pressure to the rivets that bind American business into solidarity and success.

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**BRITISH BOARD OF TRADE REPORT FOR MARCH**

| Year— | 1932 | 1931 | 1930 |
|---|---|---|---|
| Exports of yarn, pounds | 14,000,000 | 11,000,000 | 13,000,000 |
| Exports of cloth, yards | 203,000,000 | 136,000,000 | 281,000,000 |

**ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK MARCH STATISTICS**

| Year— | March 1932 5 weeks | February 1932 4 weeks | March 1931 5 weeks |
|---|---|---|---|
| Production | 285,252,000 | 244,342,000 | 271,638,000 |
| Sales | 165,850,000 | 245,582,000 | 295,384,000 |
| Shipments | 265,675,000 | 258,744,000 | 317,185,000 |
| Stocks | 259,231,000 | 239,654,000 | 273,781,000 |
| Unfilled orders | 278,163,000 | 377,988,000 | 373,951,000 |

March sales of domestic cotton goods were 58.1 per cent of production against 100.5 in February this year and 108.7 in March last year. Shipments were 93.1 per cent of production against 105.9 in February this year and 116.8 in March last year. Stocks at the end of March increased 8.2 per cent against a decrease in February this year of 5.7 and a decrease in March last year of 14.3. Unfilled orders at end of March decreased 26.4 per cent against a decrease in February this year of 3.4 and a decrease in March last year of 5.5.

**CENSUS REPORT**

| United States—Bales— | This season | Last season |
|---|---|---|
| Consumption of lint, March | 488,655 | 490,509 |
| Consumption of linters, March | 54,229 | 64,003 |
| Consumption including linters, March | 542,884 | 554,512 |
| Consumption of lint, 8 months | 3,569,945 | 3,384,136 |
| Consumption of linters, 8 months | 440,250 | 453,651 |
| Consumption including linters, 8 months | 4,010,195 | 3,837,786 |
| Mill stocks March 31st | 1,566,205 | 1,478,120 |
| Stocks in public storage and warehouses March 31st | 8,766,979 | 6,657,807 |
| Stocks in mills, public storage and warehouses March 31st | 10,333,184 | 8,135,927 |
| Active spindles during March | 24,818,008 | 26,504,182 |

# "This is no fairy tale," said the Erector "It was a remarkable demonstration of Picker Efficiency," said the Superintendent

## THESE LETTERS TELL THE STORY

SACO-LOWELL SHOPS
INTER-OFFICE CORRESPONDENCE

To: SPARTANBURG, MR. WORTH
From: EASLEY, MR. GREGOIRE
Date: January 16, 1932.
Subject: Glenwood Cotton Mills
Easley, S. C.

Dear Mr. Worth:

I have visited the Glenwood Cotton Mills and sent a report to Boston as per your instruction.

Right here and now I want to say something that may sound like a fairy tale. I have three machines running here. Their standard weight on laps is 48 lbs. with a 1/4 lb. limit both ways, which makes it 47¾ to 48¼ lbs.

The machines are fed by hand as yet, and we made a run of 310 laps without losing one. The 311th was 48½ lbs. This run was continued until we had made 440 laps. Out of this number 4 laps were lost due to the hand feed, and only one can be blamed on the machine. We have actually lost 5 laps in 440, which is a loss of only .88% and a 100% perfect record on 310 laps.

Now I am not throwing the bull, these are figures I got from Mr. Taft, Overseer, and Mr. Garrison, Superintendent. They are not my figures and the machines were doffed by one of their men whom I had helping me for the first two machines, and they were fed by hand by one of their men. You can verify this from them if you want to.

Yours very truly,
W. R. Gregoire.

SACO-LOWELL SHOPS
TEXTILE MACHINERY

January 26, 1932.

Mr. M. E. Garrison, Supt
Glenwood Cotton Mills
Easley, S. C.

Dear Sir:

We have been furnished with a copy of the report from our erector Mr. W. R. Gregoire, to Mr. Worth, under date of January 16th, copy of which we attach hereto.

We would appreciate it very much if you would write us a letter confirming these figures, stating at the same time your general impressions of the One Process Pickers which Mr. Gregoire has just installed in your mill.

Thanking you in advance for your courtesy in this matter, and awaiting your reply with interest, we are,

Very truly yours,
SACO-LOWELL SHOPS.

GLENWOOD COTTON MILLS
PRINT CLOTHS AND SHEETINGS
EASLEY, SOUTH CAROLINA Jan. 28/32

Mr A. E. Landers
Saco-Lowell Shops
Boston, Mass.

Dear Sir:- Yours of the 26th to hand and noted. I beg to confirm what Mr. Gregoire has said in his letter of Jan. 16th regarding the run of laps and our new one process pickers. His figures are correct in every detail. It was the most remarkable demonstration of picker efficiency I have ever seen. I am delighted with the operation of these machines and I know we are going to show quite a saving in both power and labor, to say nothing of the benefits

Mr. M. E. Garrison, Supt.
Glenwood Cotton Mills
Easley, S. C.

Dear Sir:

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Very truly yours,
SACO-LOWELL SHOPS.

Saco-Lowell Shops
Boston, Mass.

Gentlemen:

Yours of the 26th to hand and noted. I beg to confirm what Mr. Gregoire has said in his letter of January 16th regarding the run of laps on our new One Process Pickers. His figures are correct in every detail.

It was the most remarkable demonstration of picker efficiency I have ever seen. I am delighted with the operation of these machines and I know we are going to have quite a saving in both power and labor, to say nothing of the benefits we will derive throughout the mill by having more even laps.

Yours very truly,
M. E. GARRISON, *Supt.*

# SACO-LOWELL

147 MILK STREET, BOSTON, MASS.

CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

British exports of cloth and yarns for the month of March showed improvement, reflecting a change for the better in England.

On the other hand, the domestic cotton-textile report for March was rather unfavorable at a time when hope was entertained for a steady increase in United States consumption, especially since it was reported that an agreement had been arrived at among print cloth manufacturers operating more than 85,000 spindles to curtail the output four weeks between now and the first half of July to bring about a better balance of production with consuming requirements. This curtailment, it is said, supplements that already under way and which is to continue to the first of October. It is reported that meetings are also being held looking toward a better regulation of production of narrow sheetings where sales have also been running below current output.

| April 8th—American cotton— | This season | Last season |
|---|---|---|
| In sight since August 1st (marketed) ..... | 14,469,917 | 13,126,149 |
| Exports from the U. S., inc. Canada, since Aug. 1st ..... | 7,104,000 | 5,803,000 |
| Spinners takings since August 1st (world).. | 10,611,000 | 8,718,000 |
| World's visible supply ..... | 9,304,000 | 7,613,000 |

Compared with last year the world's visible supply of other kinds on April 8th was 1,941,000 bales against 2,543,000, and of all kinds 11,245,000 versus 10,156,000.

The movement to market continues heavy for this time of the season compared with last year; last week 150,600 bales versus 45,014, but exports from the United States last week were large, including Canada, 184,000 bales against 94,000, and spinners takings last week were good —296,000 bales against 166,000. As yet the outlook for exports continues favorable, at least for the near future.

The New York Cotton Exchange service estimates the world's consumption of American lint cotton during February at 1,051,000 bales versus 898,000 for the corresponding month last season, and for the seven months ending with the close of February 7,201,000 bales against 6,275,000. The same authority estimated the world's stock of American cotton at the end of February at 18,406,000 bales against 13,697,000 on the corresponding date last year.

Regarding the outlook for the new crop, while the weather of late has been more favorable for plowing, temperatures have been rather too low, particularly in the western half of the belt. Labor is reported to be plentiful, nevertheless preparations are reported generally backward, and sales of fertilizer tags to the close of March were comparatively light. As to the acreage, private returns of late indicate an average reduction of about 9.8 per cent, ranging from about 7.3 to 12.5, which is a smaller reduction than was expected earlier in the season. A recent private report placed plowing at 32 per cent completed against 44 per cent last year, and 87 per cent of correspondents stated they expect greater weevil damage than last year.

Official reports to Secretary Hester of the New Orleans Cotton Exchange, as to sales of fertilizer tags in 10 cotton states for 8 months ended with the close of March, show sales to have been for 1,048,006 tons against 2,222,687 for corresponding period last season and 3,254,611 tons for the same time season before last.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

| Year— | 1932 | 1931 | 1930 | 1929 | Normal |
|---|---|---|---|---|---|
| March ..... | 1.46 | 2.50 | 1.73 | 2.58 | 2.08 |
| Nov. to March inclusive ..... | 15.74 | 12.95 | 9.86 | 11.33 | 10.19 |

While it would seem as if Texas has a good season in the ground, late advices from Southwest Texas are rather unfavorable, stating the crop in that early section to be late, fields in a bad state of cultivation, and that drouth is becoming serious, and that some replanting will be necessary unless rain comes soon.

There was issued this week the first of the season's weekly weather and crop government reports, which reads: "Field work was active in the cotton belt and much ground was prepared for planting, which progressed steadily in the more southern districts. Some cotton planted north to southeastern North Carolina and southern Arkansas, while in Texas, planting progressed steadily in the north-central portion of the state. In the western portion of the cotton belt, the weather was rather unfavorable for germination because of cool nights."

As to the future course of the cotton market, while values have displayed more stability of late, much will probably depend on future developments in Washington and Wall Street, on the trade and speculative demand, and especially on the outlook for the next American crop.

Today some encouragement was derived from the following advices, which occasioned some recovery in the stock market, to which cotton responded by advancing somewhat:

Governor Meyer, of Federal Reserve Board, says: "I am hopeful that we are now at a point where we will be able to hold the line."

Washington: "Senator Smoot, Chairman of Senate Finance Committee, on the Senate floor advised American investors to hold their stocks, declaring that many issues were selling below their intrinsic value."

## What the Southern Mills are Doing

FORREST B. GARDNER and Carl M. Rudisill have purchased the interest of J. S. P. Carpenter in the Cartex Mills, Salisbury, N. C. Mr. Rudisill will continue as vice-president and general manager, and Mr. Gardner, who was formerly with Saco-Lowell Shops as selling agent, is president and superintendent of the mill.

Mill No. 1 of the Jackson Mills, Iva, S. C., has replaced spooling and warping with sufficient Barber-Colman automatic spoolers and high speed warpers to handle its entire production.

Firth-Smith Co., of Boston, are installing 11 additional units of the bunchless automatic over-head cleaners in the spinning rooms of the Fulton Bag & Cotton Mills, Atlanta, Ga. Spartan Mills, Spartanburg, S. C., and Ninety-Six (S. C.) Cotton Mills, are also equipping their spinning rooms with this type of cleaner.

Cannon Mfg. Co., Kannapolis, N. C., have purchased 5,000 spindles of "Elastix" rolls for long draft spinning, through William Lee, selling agent, Charlotte, N. C.

Aponaug Mfg. Co., Kosciusko, Miss., have recently installed a Hermas shearing machine, purchased through the Carolina Specialty Co., of Charlotte, who announce also that Victor-Monaghan Co., of Greenville, S. C., have purchased a number of Hermas automatic shearing machines and vertical brushing machines for several of their plants.

J. W. Sanders, of Jackson, Miss., acquired the plant of the Magnolia Cotton Mills, at McComb, Miss., recently at auction sale. It is understood that the property will be revamped and placed in operation.

Four printing machines are being installed in the new building at the Ware Shoals (S. C.) Manufacturing Co.

Pearl Cotton Mills, Durham, N. C., have been acquired by the Erwin Cotton Mills Co., and will operate as Mill No. 6 of that organization.

Lancaster Cotton Mills, Lancaster, S. C., will erect a one-story and basement building, for which Robert & Co., Inc., Atlanta, Ga., are the engineers.

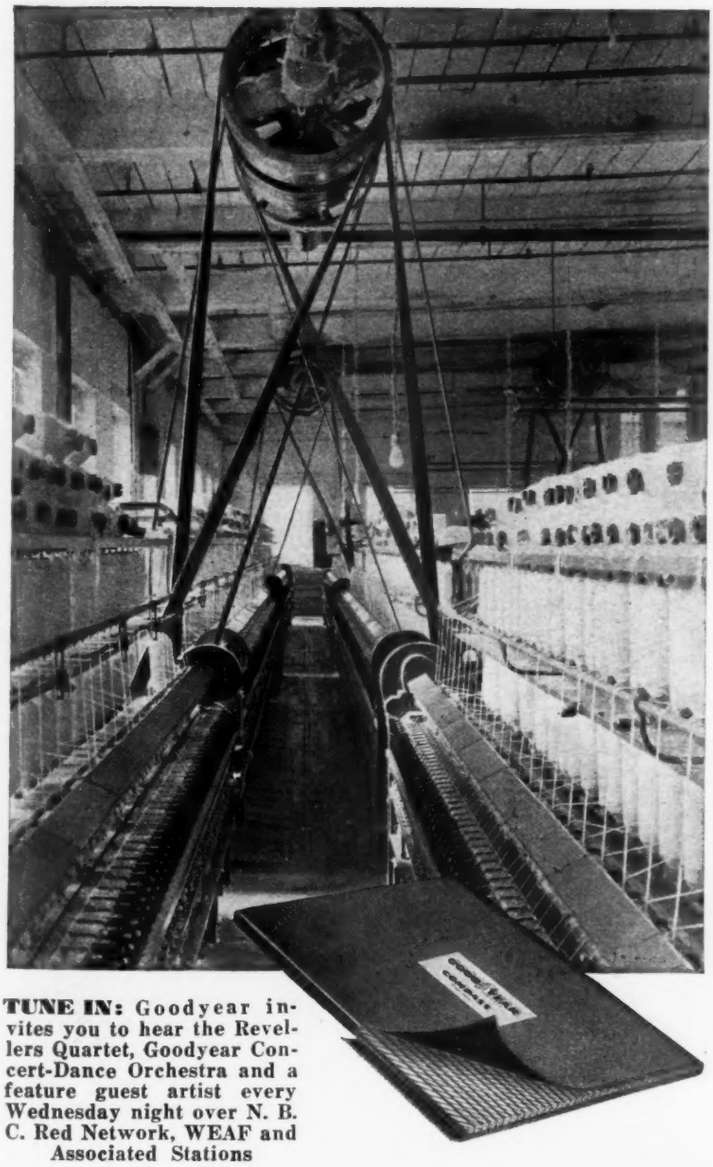
The cotton mill at Marshall, N. C., acquired by the Kansas City Textile Co., is expected to re-open soon.

Dunean Mills, Greenville, S. C., it is reported, have recently purchased 500 new Draper looms.

Cannon Manufacturing Company, Kannapolis, N. C., have, it is reported, purchased 250 Model X Draper looms from the Draper Corporation, Hopedale, Mass.

# Cotton is "IN" Again!

# GOODYEAR IS READY TO HELP



**TUNE IN:** Goodyear invites you to hear the Revellers Quartet, Goodyear Concert-Dance Orchestra and a feature guest artist every Wednesday night over N. B. C. Red Network, WEAF and Associated Stations

IT'S IN the news of the day. The First Lady of the Land attracts all eyes at a public reception in her sprigged muslin dimity gown.

This impetus to the new vogue and demand for cotton finds Goodyear ready as no other is to supply the requirements of cotton manufacturers.

Out of its own experience as one of the world's largest users of cotton, and the experience of hundreds of cotton mill operators, Goodyear brings to your service the established values of better equipment, specially designed, constructed and applied for cotton mill duty.

Take Goodyear COMPASS (Cord) Endless construction, or Goodyear THOR seamless construction. Practically stretchless, protected at the edges, and capable of delivering full power, they are setting new records for long, trouble-free, low-cost belt service in the textile industry.

These and other Goodyear Belts of special design and construction are accurately specified to their duty on the various drives in cotton mills by the G.T.M.—Goodyear Technical Man. Goodyear Hose for clean-up duty is also a money-saver.

Talk with the G. T. M. about your belt or hose problems. A line to Goodyear, Akron, Ohio, or Los Angeles, California, will bring him.

THE GREATEST NAME IN RUBBER

GOODYEAR

TEXTILE BELTING

# New Textile Equipment and Publications

## A New Form of Cotton Cleaning Machine—the Gyrator.

A new cotton cleaning machine which simply sifts the dirt, leaf, motes and other foreign matter out of the stock is claimed by the manufacturers, the Lummus Cotton Gin Co., Columbus, Ga., to be a really new principle in cotton cleaning. It is called the Gyrator.

The new machine consists essentially of three connecting rods supported and driven by crankshafts with crankpins 120 degrees apart and revolving in a long rectangular housing with grid bars in the bottom of it. To each connecting rod is secured a series of spring steel fingers, so staggered as to cover the whole surface of the grid bars as the connecting rods move in their gyratory path. The cotton is propelled over the grid bars by these gyrating fingers, which whip the stock open thoroughly, and kick it along over the bars; permitting the dislodged waste to fall freely from the good cotton.

There are thus no air currents to carry loosened foreign matter along with the cotton, it is pointed out. The cotton is moved through the machine solely by the repeated whipping and kicking action of the gyrating fingers; there is no forced draft nor suction, so that anything shaken out of the stock can fall through the grids.

The manufacturers point to the absence of powerful suction in this cleaning equipment which, they explain, would tend to carry the waste matter along with the good stock. Also, they state, the absence of a rotating beater eliminates objectionable curling or stringing of the stock; violent beating employed in cleaning having a tendency to break up leaf and motes into finer particles which are very hard to get out of the cotton.

Furthermore, it is pointed out, it is generally admitted that well-opened cotton should be thoroughly bloomed, so that the fibers are fully separated, and as much trash as possible taken out; the manufacturers of the Gyrator assert that as an adjunct to the ordinary opening room equipment, this machine will fluff the stock and take out more pin trash and motes than has been possible in the past.

The chief claims advanced for this new machine are:

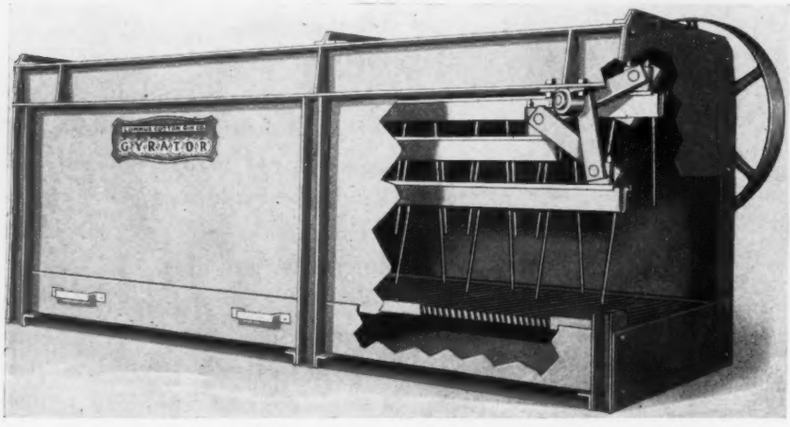
That it sifts foreign matter out without breaking up leaf and motes into smaller pieces. That since it operates without air currents, it removes much foreign matter which would be carried along with air conveying cotton.

That regardless of the length of the machine, it does not injure the cotton. It is claimed that cotton has been repeatedly passed through this machine a sufficient number of times to represent the equivalent of a machine 1,000 feet long, and that no signs of injury could be noticed.

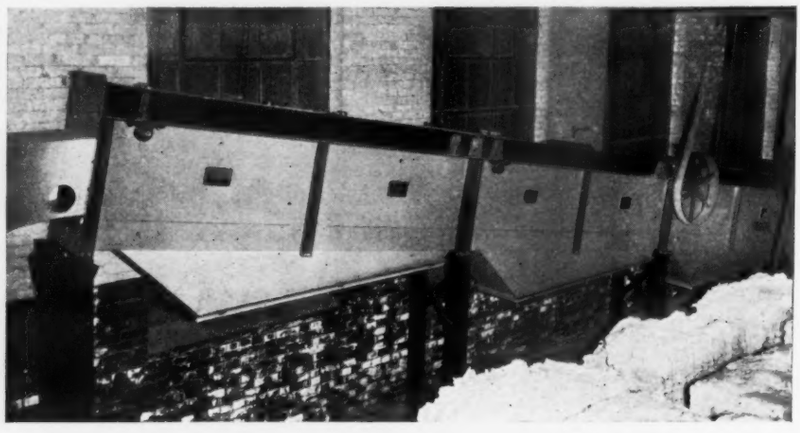
It is further pointed out that in addition to opening and cleaning cotton, the equipment conveys it as well, often making a fan and condenser unnecessary with a consequent saving in power. In such cases, it is explained, the cotton is delivered in a bloomed condition instead of as a slightly compressed bat from the condenser.

The adaptability of the machine for installation in space and in locations not otherwise available for cleaning equipment is also pointed out; as is the claim that no good stock is removed with the waste.

The makers particularly advocate the possibilities of this machine as a finishing cleaner, to be used after an installation of conventional types of opening equipment. They claim that the design of this machine makes it particularly efficient in removing waste



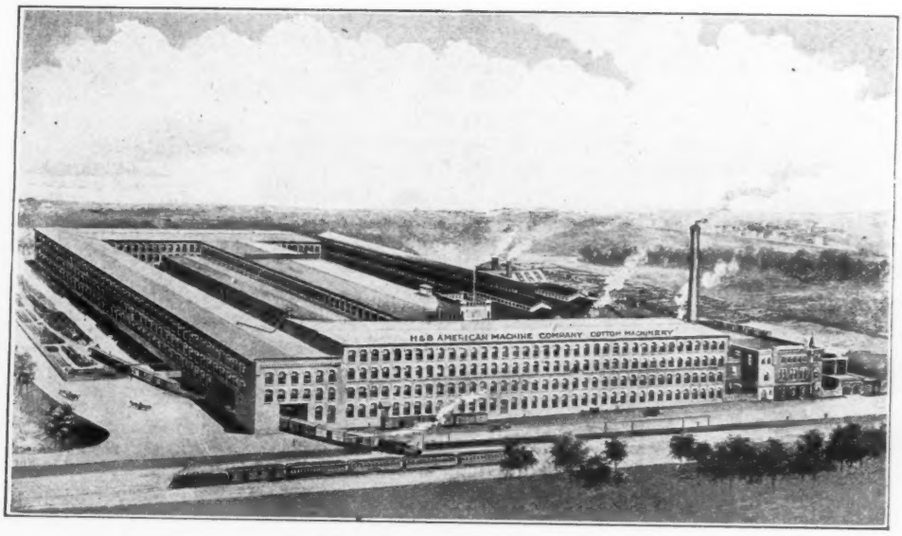

A section of Gyrator Cleaner, showing the interior construction. The gyratory motion of the fingers set in the connection rods causes the cotton to move forward through the machine and over the grids. The repeated whipping and kicking action of the fingers shakes the stock thoroughly; the dislodged foreign matter falls by gravity through the grid bars. It takes about 20 times as long for cotton to pass through this machine as through a similar length of cleaning trunk. This design is used where the machine sits on the floor. The waste is collected in steel trays, or drawers, which are removed and dumped when full.



An installation of the Gyrator against a wall, occupying no useful space. The waste is simply dumped out of the collectors at cleaning time. This machine is conveying cotton upward at an angle of about 20 degrees.

# H & B AMERICAN MACHINE CO.

PAWTUCKET RHODE ISLAND




BUILDERS OF

COTTON PREPARATORY & SPINNING MACHINERY

INCLUDING

A-1-ONE PROCESS PICKING

REVOLVING FLAT CARDS

NEW MODEL MECHANICAL STOP-MOTION DRAWING FRAMES

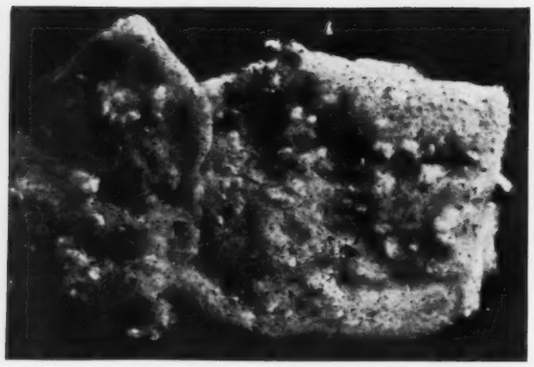
SLUBBING-INTERMEDIATE-ROVING FRAMES

NEW MODEL HIGH-DRAFT SPINNING FRAMES

MEDIUM AND HEAVY PATTERN TWISTERS

——ATLANTA OFFICE——

815 THE CITIZENS & SOUTHERN NAT'L B'K BL'D'G.



Unretouched photograph of a sample of waste from a Gyrator cleaner taken from a mix of Middling and Strict Middling which had been passed through a complete installation of opening equipment, which had separated the waste from the lint . . .

which has been freed from the stock in other opening machines, but which has gone along with the air currents which convey the cotton.

They also claim that the character of the waste taken from this machine demonstrates that it is not necessary to beat cotton to clean it. They contend that if the cotton is thoroughly opened, and the foreign matter shaken loose from the lint, that a gentle sifting action will take out motes as well as leaf, sand and miscellaneous trash. Naturally, it is pointed out, motes removed in this manner are not broken up, and the freer the cotton is of broken motes, the better it will card, and the fewer neps in the yarn.

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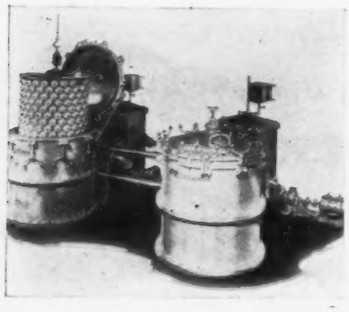
## Butterworth Co. Announces the "Ultra" Package Dyeing Machine.

H. W. Butterworth & Sons Co., Philadelphia, Pa., have announced the Ultra package dyeing machine, a development by the engineers of the company, as a departure from usual methods used in machines for package dyeing of yarns on tubes or beams. With this machine, it is pointed out, the dyeing can be done either from the inside out or from the outside in. The standard type of dyeing kier has been re-designed so that an even pressure current is distributed over the length of the kier, and the packages or beams are subjected to a constant spray of dye liquid which attacks the material gently from all sides.



"Ultra" package dyeing machine.

The dyeing kier consists of four major parts—an inner perforated cylinder, an outside solid cylinder, the bottom part, and the cover; the cover is provided with a handy sampling device permitting a sample of the material to be taken at any time without first opening the lid or cover. Some of the advantages as claimed and set forth by the manufacturers are:

"The rapidness of the flow of the dye liquor, especially from outside in, for guaranteeing a thorough leveling-up of the dyeing. The unusual distribution of the dye liquors over the entire length of the material carriers by a double-acting connection with the dye pump. The airtight construction of the by-tank, making the equipment especially adaptable for dyeing algol, vat, indanthrene, and naphthol, as well as for general uses in dyeing direct and sulphur colors."

A dyestuff agitator is installed inside the by-tank, for providing a thorough mixture of the dyestuffs before they enter the dye kier. No dye liquor enters the dye kier directly, but only indirectly through the by-tank, after thorough mixing by the agitator.

The equipment is flexible, in that special carriers only are furnished for dyeing and bleaching cops, yarn packages, beams, raw stock, card slivers and roving, to adapt the equipment to any of these forms of processing. The loading and unloading of the various apparatus is done by an overhead running hoist or crane. A double mantle is a unique feature of the dye kier design, the inside of this mantle being perforated over the entire length of the dye kier for providing level and even dyeings. A non-clogging pump of special design is used in connection with the by-tank to provide a smooth and even flow of liquor. The dye liquids are screened before entering the dye kier by a unique dye feed arrangement.

For dyeing warps on section beams, the yarn may be wound directly onto the dyeing beam from the spinning bobbin or package.

The manufacturers point out that the equipment has low steam consumption; that once the temperature has been brought up to the desired degree, it will remain there during almost the entire dyeing process. The machine has great flexibility of production requirements, from 25 pounds up to 3,600 pounds in one color or shade, it is pointed out. The dye kier and by-tank are constructed of Meehanite Metal, which, it is explained, provides durability and a minimum of corrosion possibilities.

Another feature of the machine explained by the manufacturers is the saving of space due to the vertical arrangement of the dyeing apparatus, as well as of the pre- and after-treatment machines.

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## Booklet on Rubber Rolls for the Textile Industry.

"Over 60 per cent of rolls returned for recovering have not given their full service because of abuse and the lack of ordinary care," says William Brown in a booklet recently issued by the American Wringer Company of Woonsocket, R. I., makers of Tensilastic rubber rolls. This booklet, entitled "Rubber Covered Rolls in the Textile Industry—Their Care and Protection", is a new contribution to textile technical literature. It is of particular value to those interested in securing longer, more efficient service from rubber covered rolls used in the bleaching, dyeing and finishing of cotton, wool, worsted and silk.

Some of the subjects covered are Density, Weighting or Pressure, Grinding, Oxidation, Inspection, Storing. It is an aid in determining the proper rolls to use under varying conditions and contains many suggestions on securing the greatest degree of service and satisfaction from rubber rolls.

Mr. Brown, sales manager of the American Wringer Company, has been identified with rubber covered rolls in the textile field during the past thirty years.

:: :: ::

## Shambow Shuttles Treated by New Process.

Announcement has been made that all wooden shuttles made by the Shambow Shuttle Co., Woonsocket, R. I., are now treated by the D'Arcy method of wood impregnation which is said to materially lengthen the life and usefullness. By the D'Arcy method, a development of Shambow engineers, the shuttles are immersed under pressure in special solution that permeates the fibers and pores of the wood to the core, it is stated. Following this, the shuttles are thoroughly and carefully dried until all moisture is expelled so as to leave nothing to stain or disintegrate. It is pointed out that the penetrating substance becomes a part of the wood itself, closing the pores to dampness, making shuttles so treated hard, yet elastic, and moisture-proof.

# SEALED RESULTS

## -In Sizing and Finishing

The buyer of sizing and finishing materials today cannot afford the luxury of ordering a shipment that may turn out to be below his specifications. In all such dealings good, honest materials must be taken for granted.

But his concern cannot stop here . . . for the responsibility that supplies his finishing and sizing materials is an essential consideration. Seasoned buyers have learned from their experience to consider only supplies of long standing, with a clear record of unquestionable responsibility, with strong financial standing, and with every promise of permanence.

That these basic requirements are met by Arnold, Hoffman is attested by the fact that hundreds of textile mills have long standardized upon the "sealed results" of this company.

The Arnold, Hoffman line includes Gums, Sizing Compounds, Oils, Soaps, Dextrines and Chemicals of the highest quality. They promote faster production, real savings, more salable textiles.

Formulas for the best method of obtaining any desired finish on any fabric will be cheerfully given upon receipt of your letter.

AH Co

## ARNOLD, HOFFMAN & CO., INC.

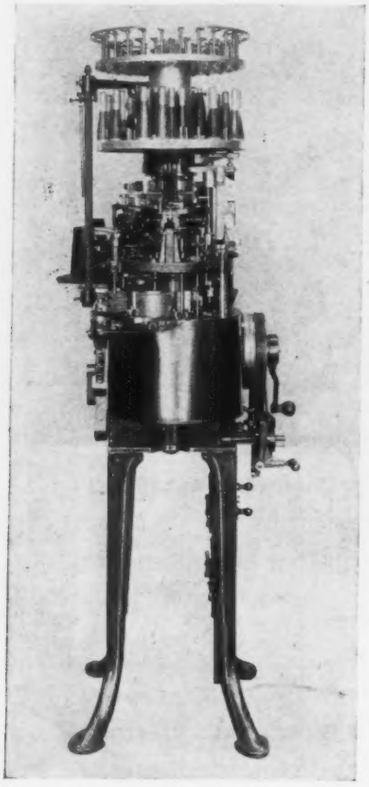
PROVIDENCE - NEW YORK
CHARLOTTE - PHILADELPHIA - BOSTON

PRODUCTS—Warp Dressing, Finishing Materials, Soluble Gums, Sizing Materials, Soaps, Soluble Oils, Sulphonated Oils, Alizarine Assistant, Pigments, etc.

SOLE AGENTS FOR Belle Alkali Company of Belle, W. Virginia. Liquid Chlorine, Bleaching Powder, Caustic Soda (Solid and Flaked).

## Standard-Trump Introduces New 80-Wrap Machine.

Standard-Trump Brothers Machine Company, Wilmington, Del., have brought out a new 80-wrap machine of the individual needle wrap type. It is explained that 80 wrap bobbins make it possible to use 80 different colors; that is, different colors on each needle



New 80-Wrap machine.

in groups. The machine has 25-step pattern mechanism, with trick wheel control. It will turn out hose with high splice, double sole, plaited body. The exclusive "Gussetoe" gives a tailored fit to the foot, it is explained. Any type of warp yarn may be used. The machine is of the revolving cylinder, high cylinder type.

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## H. M. McCord Opens Philadelphia Office.

The H. M. McCord organization has opened a Philadelphia office at the Commercial Trust Building, in charge of C. M. French, who is well known in the Philadelphia district and has been associated with the textile industry for fifteen years. The activities at this office will be devoted to the sale of complete mill properties, liquidations, appraisals, and the sale of all types of full-fashioned, seamless and underwear knitting properties and equipment. Mr. McCord also operates offices in New York City, at Park Avenue and 42nd St., and at Boston, Mass., and Greenville, S. C.

## New Type Franklin Process Raw Stock Dyeing Machine.

Franklin Process Company, Providence, R. I., have announced a new type of raw stock dyeing machine, as an addition to their line of this equipment, operating on the same principle as other models, but differing in that it is entirely of cast metal alloy construction. The company states that this model is particularly suitable for the dyeing of light, delicate shades. Very few dyestuffs, they point out, are sensitive to the alloy used in this machine; furthermore, since it is practically self-cleaning, it is possible to change from dark to light shades with a minimum of cleaning.

New Raw Stock Dyer.

This type of machine operates with a closed kier under pressure. The expansion tank, through which the dye liquor is added, is open. The dye liquor is circulated through the stock in one direction, from the top down. After being dyed, the stock is removed from the machine by means of a false bottom and center post to which is attached a chain hoist. The advantages claimed for this type of equipment are: "superior condition of the stock after dyeing; reduced labor cost; lower upkeep; saving in dyestuffs, chemicals and steam; and retardation of depreciation of building and equipment due to the absence of dyehouse fog."

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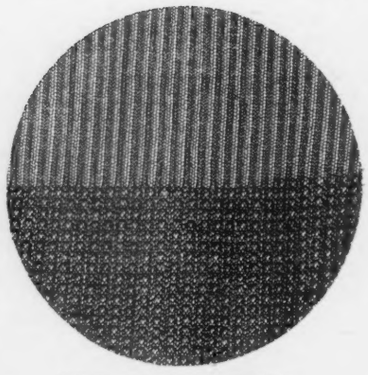
## New 20-Cut Swiss Rib Fabric Shown by Scott & Williams.

Scott & Williams, Inc., 366 Broadway, New York City, have developed a new fabric of the ribbed knit type for underwear. This is a 20-cut fabric, a product of the company's automatic swiss rib 20-cut machine, and it has an unusually fine rib, the finest produced up to this time, it is pointed out.

Exceptional elasticity is one of the results of the special wale-fineness; and of course there is more daintiness to the finished garment. This 20-cut swiss rib fabric can be made in all silk, rayon and silk, or all rayon; lending itself particularly well to fine count yarns. The accompanying illustration shows the actual size of the rib, in both the plain and the tuck-stitch portions. The announcement of the fabric states: "In view of the decided increase in popularity of the knitted undergarment, both one and two-piece styles, this introduction of a new finer fabric is most timely. The success of the 'form-fitting' style for winter wear has brought about its adaptation in various cool yarns for summer, and this 20-cut fabric is an effective expression of this trend."



20-Cut Swiss Rib Fabric.

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### PUBLISHER'S STATEMENT

of the ownership, management, circulation, etc., required by the act of Congress of August 24, 1912, of COTTON, published monthly at Dalton, Ga., for April 1st, 1932.

State of Georgia, County of Fulton.

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared W. J. Rooke who, having been duly sworn according to law, deposes and says that he is the Business Manager of COTTON, and that the following is to the best of his knowledge and belief, a true statement for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, R. W. Philip, Atlanta, Ga.; Business Manager, W. J. Rooke, Atlanta, Ga.

2. That the owners are: W. R. C. Smith Publishing Co., Atlanta, Ga.; W. R. C. Smith, Atlanta, Ga.; W. S. Cushion, Cleveland, Ohio; O A. Sharpless, Atlanta, Ga.; J. C. Martin, Atlanta, Ga.; H. H. Kelley, Willoughby, Ohio; W. J. Rooke, Atlanta, Ga.; T. W. McAllister, Atlanta, Ga.; P. D. Hammett, Chicago, Ill.; E. W. O'Brien, Atlanta, Ga; E. L. Philpot, Atlanta, Ga.

3. That the known bondholders, mortgagees and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or any other security holders are: None.

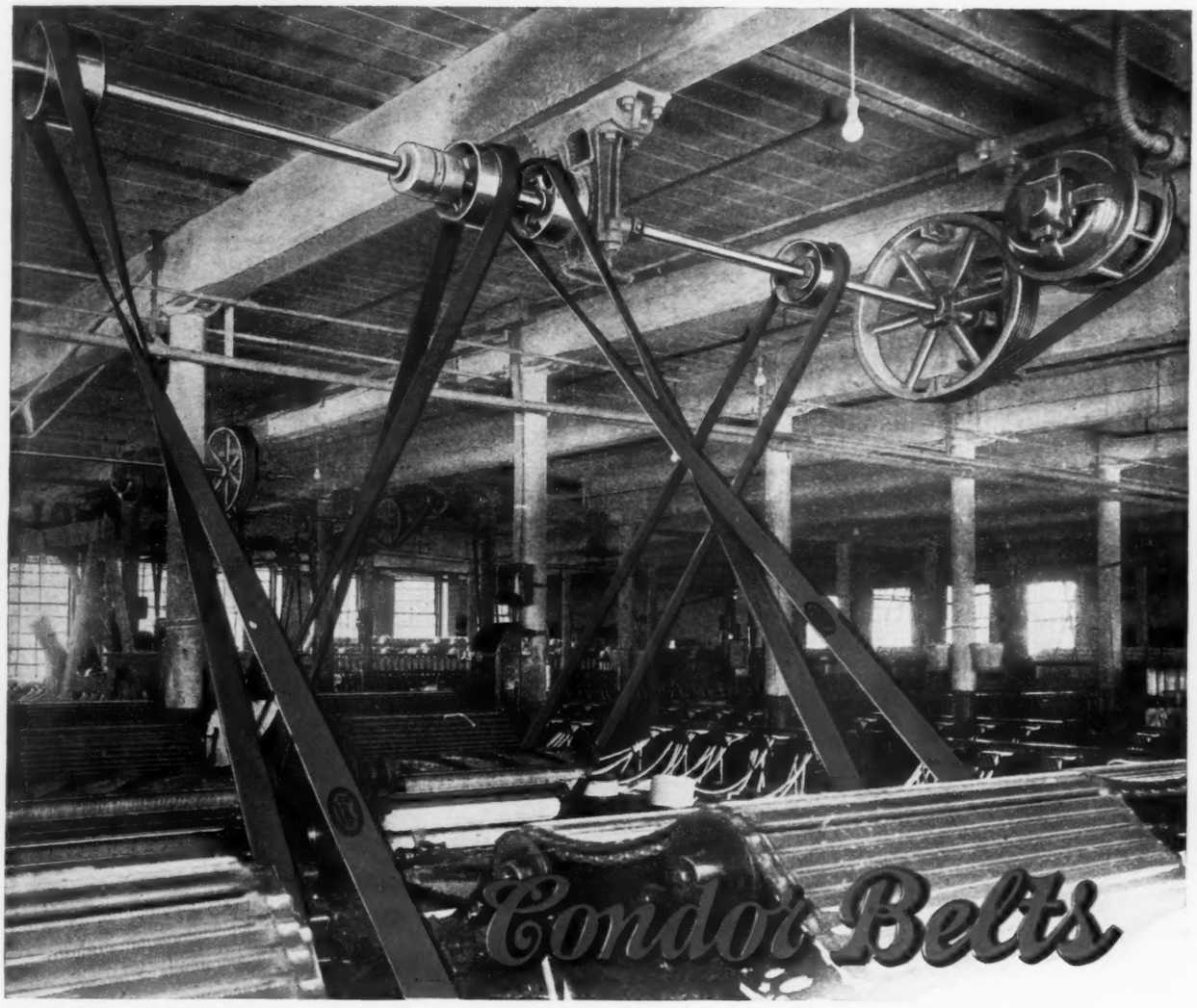
4. That the two paragraphs next above giving the names of the owners, stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs containing statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stock holders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bonafide owner and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

W. J. ROOKE. Bus. Mgr.

Sworn to and subscribed before me this 1st day of April, 1932.

E. L. PHILPOT, Notary Public.

My Commission expires March 2, 1935.




# have won a place in Textile Mills

In the above installation view, may be seen hundreds of feet of Condor Belting. This modern textile mill uses both Condor Flat and V-Belts. The superintendent states, "The belts have been running very satisfactorily."

**Condor LINE**

| | |
|---|---|
| V-Belt | Fire Hose |
| Flat Belt | Steam Hose |
| Cone Belt | Mill Sundries |
| Air Hose | Suction Hose |
| Acid Hose | Oilless Bearings |
| Water Hose | Rubber Lined Tanks |

Rubber Covered Rolls
Industrial Brake Blocks and Lining

Condor remains virtually constant in length, degree of flexibility, and pulley grip month after month over a wide range of atmospheric and working conditions.

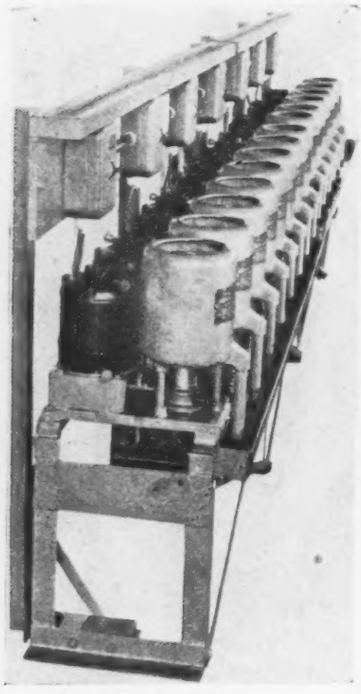
For "great economy," use Condor "work muscles" to turn your machines.

**The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.**
Executive Offices and Factories, Passaic, New Jersey

### New Motor-Driven Single Package Extractor.

A new method of drying or extracting yarns which have been dyed on the spool or "package", known as a motor-driven single package extractor, has been developed by the American Tool & Machine Co., 1415 Hyde Park Avenue, Boston, Mass. Each package is handled singly in separate units which may be supplied in batteries of any number of units.

The unit consists of a container for a single spool, mounted on a vertical axis and driven by a motor through a V-belt. A vertical spindle is mounted



Single-Package Extractor.

in ball bearings which, in turn, are mounted in a flexible seat. A spindle extension projects upward through the center of the backet container to centralize the spool. The baskets or revolving elements are made 5 inches inside diameter and have perforated sides; for small spools, extra removable inner baskets are supplied.

The motor and extractor are mounted on a single base, and any number of units may be used in a battery. One control switch is furnished for each pair of extractors; a novel method of dynamic braking being used for accelerating the cycle. In operation, assuming that one pair of extractors have stopped, the operator snaps the switch "Off" on the next set. By the time he has removed and replaced the spools in the first two units, the second set has come to a stop. One operator can handle 16 machines on a two-minute cycle, it is explained, giving an estimated output, from 16 machines, of more than 400 spools per hour per operator.

The manufacturers state that spinning each package singly, and in a vertical position, eliminates distortion and keeps the spool in perfect condition, so that the yarn will unwind easily, quickly, and without breaking. They point out that it is not necessary to plug the tubes, that the cores hold their shape, and that the packages may be re-dyed without re-winding. They also assert that the spools come out of a single package extractor drier at the core than at the periphery, which aids and speeds oven drying. Also that single trial packages may be extracted, and that small batches can be handled advantageously.

# NEWS ITEMS *with a Textile Slant*

### Cotton Content Bond Paper.

A new chapter in the history of paper making has been opened with the offering recently made by The Champion Fibre Company, Canton, N. C., of their new Cotton Content Bond. According to an announcement of Reuben B. Robertson, president of the company, this new paper has 25 per cent Cotton Content which is thought to offer a new and volume use for cotton, since the paper may be utilized for a great many purposes in practically every office.

Cotton Content Bond is not a cloth finish sheet and in general appearance it is very much like other bond papers. Its chief uses are for letterheads, office forms, invoices, envelopes and the like. Its most apparent differences from other papers are its brilliant whiteness and unsual strength, considering its low price, both a result of the use of cotton in its manufacture.

By a special process of this company, the cotton fibers are mixed with wood pulp—also produced in the South—to form this new Cotton Content Bond. That Cotton Content Bond does offer a volume use for cotton can be seen when it is realized that each ton of the new paper consumes 500 pounds of cotton.

In speaking of the perfection of Cotton Content Bond, Mr. Robertson commented as follows: "We feel particularly fortunate in having developed this new paper containing 25 per cent cotton. Located in one of the cotton states as we are, we have watched the price of cotton with considerable alarm, realizing that to no small extent the prosperity of our own business as well as business in general throughout the South is dependent on the price secured for the South's chief commodity. While it is impossible to say at this early stage just what effect the manufacture of Cotton Content Bond will have on the cotton market, we cannot help but believe it will cause a favorable reaction. The paper has already proven very popular with Southern business men to whom it has been shown. Our own production of Cotton Content Bond—and consequently our use of cotton—has increased at a most satisfactory rate."

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### Dayton Rubber Moves Atlanta Office; J. R. Kindig in Charge.

The Atlanta office of The Dayton Rubber Mfg. Co., Dayton, Ohio, has been removed to 212 Red Rock Bldg. J. R. Kindig has become associated with the company as district sales representative, with headquarters in Atlanta. Mr. Kindig is well-known in the power transmission field. He was connected with Fairbanks, Morse & Co., for a number of years, opening the textile office of this company in Charlotte. He has also been associated with the Fulton Supply Company, in Atlanta. The Dayton company, manufacturers of the Dayton cog-belt drive, conduct a radio broadcast from station WLW in Cincinnati, each Friday night at 8:00 o'clock Central Standard time.

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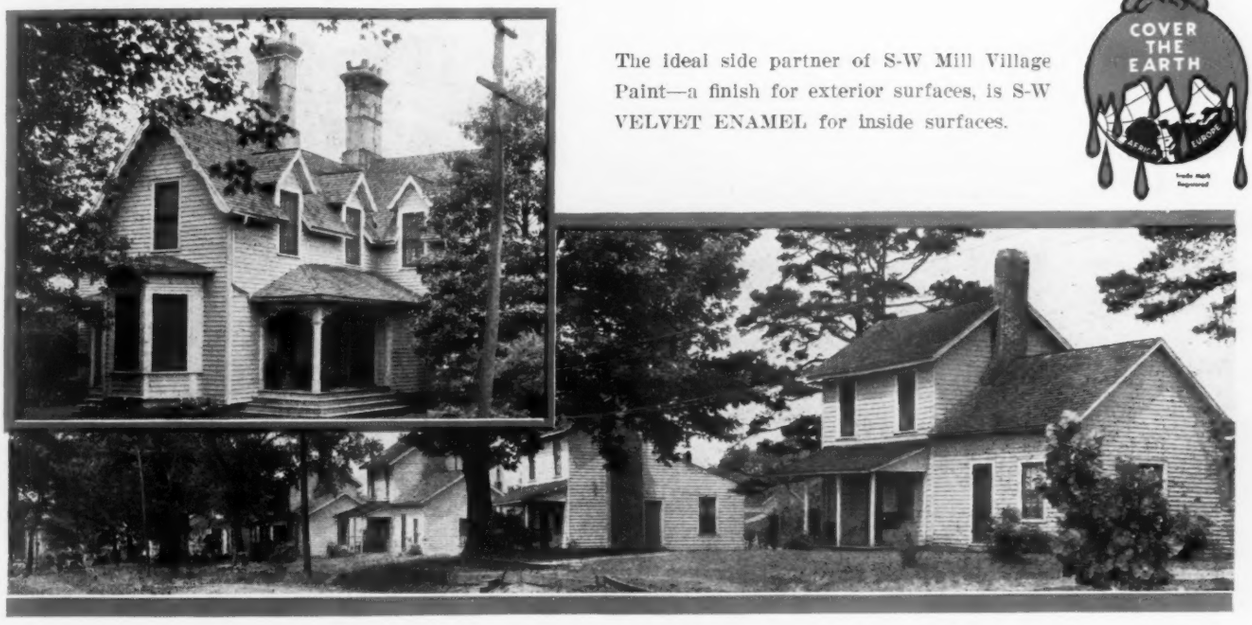
### Hemphill Patents Wrap Stripe—Double Sole.

The Hemphill Company, Pawtucket, R. I., makers of Banner hosiery machines, have recently made this announcement:

"In U. S. Patent No. 1,842,974, Hemphill Company were granted broad protection for the knitting of reinforced areas such as the high splice and double sole, in conjunction with the knitting of wrap stripe effects. In all, fifteen claims were allowed in the patent which is the invention of Robert H. Lawson. Quoting from Claim No. 11, 'In a circular knitting machine of the rotary cylinder type, needles and yarn guides for feeding a main yarn to all

# Virginia Cotton Mills STANDARDIZE ON S-W MILL VILLAGE PAINTS



The ideal side partner of S-W Mill Village Paint—a finish for exterior surfaces, is S-W VELVET ENAMEL for inside surfaces.

THE Virginia Cotton Mills, of Swepsonville, N. C., like many others, find Sherwin-Williams Mill Village Paints ideal finishes for mill village upkeep. Shown here are views of the Virginia Cotton Mills property.

S-W Mill Village Paints have been tested for economy, endurance and beauty in the greatest paint proving laboratory of all time—*actual service on mill property surfaces under every conceivable extreme of climate and temperature.* These service tests prove that mill owners may depend upon the following results when Mill Village Paints are used:

1. *Longer life* under all conditions of wear; means less frequent repainting; lower painting cost.

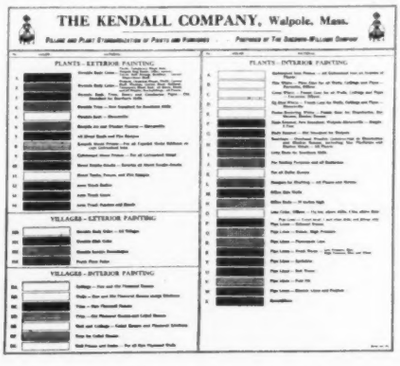
2. *Fewer gallons* to do the work because of the extraordinary covering capacity of Mill Village Paints.

3. *Improved appearance* of property and *improved morale* of workers.

As in the case of the Virginia Cotton Mills, many other leading textile properties have *standardized* upon S-W Mill Village Paints and the S-W PAINT STANDARDIZATION PLAN for mill and village upkeep. Their names will be gladly furnished you upon request.

## WHAT THE S. W. PAINT STANDARDIZATION PLAN DOES FOR MILL OWNERS:

Briefly, it eliminates costly guess work and haphazard procedure from mill property painting. It shows WHAT finish to use . . . HOW to use it . . . WHERE . . . and WHEN. Individual STANDARDIZATION CHARTS carrying the standard colors painting schedules are worked out by S-W Paint Engineers, *for each* mill. Copies of the chart are kept at all operating units of the plant, in the files of the sales office and technical departments of the Sherwin-Williams Company. Each individual product has a code number or letter, which indicates to plant executives and to Sherwin-Williams, the *purpose*, the *color* and the *product* for each surface and condition. This assures mill management of receiving a uniform grade of product as was first recommended, thus making the appearance of repairing and refinishing the same as the original finish. Complete details of this plan will be gladly furnished you. Write to the Sherwin-Williams Co., Cleveland, Ohio.


THE KENDALL COMPANY, Walpole, Mass.
PLANTS - EXTERIOR PAINTING
PLANTS - INTERIOR PAINTING
VILLAGES - EXTERIOR PAINTING
VILLAGES - INTERIOR PAINTING

*Specimen Standardization Chart*

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Listen in on Sherwin-Williams daytime program "Keeping up with Daughter" over N.B.C. network—every Wednesday at 11 a.m. (E.S.T.) on Pacific Coast at 10:00 a.m. (P.S.T.)

**NOTE:** Textile offices at Philadelphia, Charlotte, Spartanburg and Atlanta. Our warehouses at Charlotte and Spartanburg carry stock for prompt service and convenience of the textile trade.

**SHERWIN-WILLIAMS**
**MILL VILLAGE PAINTS**

of the needles during the knitting of complete courses and an additional yarn to some of the needles for partial courses only, means for wrapping at least one thread around at least one of the needles during the knitting of the said partial courses, in combination with means for so controlling the said additional yarn during the knitting of said partial courses that floats of the wrapping thread are permitted to extend along the inner face of the fabric and adjacent thereto, the additional yarn floats being confined between the thread floats and the inner face of the fabric.' Officials of Hemphill Company consider the patent to be very basic in its grants and to give them exclusive use of high splice and double sole on all wrap stripe hosiery."

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## E. P. Holder Now Vice-Pres. and Mgr. of the Tolhurst Machine Works.

E. P. Holder has been made vice-president and manager of the Tolhurst Machine Works, Troy, N. Y., manufacturers of hydro-extractors. Mr. Holder had been sales manager of The Prosperity Co., Syracuse, N. Y., and more

E. P. Holder.

recently was assistant to the vice-president of American Machine & Metals, Inc., of which the Tolhurst Machine Works is a subsidiary, and of which P. G. Mumford is president. The executive offices of Tolhurst Machine Works are at 100 Sixth Avenue, New York City.

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## Loper's Greenville Firm Incorporated in South Carolina.

As announced in March COTTON, the Fall River, Mass., office of Ralph E. Loper & Co., cost accountants, was incorporated in Massachusetts. The impression was left that the Greenville, S. C., office, at 500 Woodside Building, is a branch of the Massachusetts corporation. To the contrary, the Ralph E. Loper Co. has also been incorporated in the state of South Carolina, the officers being: Ralph E. Loper, president; Gilbert F. Van Blarcom, vice-president; and Walter Simister, Jr., treasurer. The Massachusetts and South Carolina corporations are separate organizations, although Mr. Loper is president of both.

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## New Representatives for Reliance in Atlanta, Ga.

The Reliance Electric & Engineering Co., Cleveland, Ohio, manufacturers of alternating and direct-current motors, have established a sales branch at 703 Bona Allen Bldg., Atlanta, Ga., in charge of Marshall Whitman and George Gardner. The territory covered from this point is North and South Carolina and Georgia. For many years Mr. Whitman has sold electrical equipment in the South, and is well known to the trade. Mr. Gardner was formerly assistant electrical engineer at Robert & Co., Inc., Atlanta, and is thoroughly familiar with the electrical requirements for textile machinery. This office recently announced that their company is supplying the electrical equipment to the Eagle & Phenix Mills, Columbus, Ga., which are changing over from 2-phase to 3-phase equipment.

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## Robertson to Teach Cotton Grading Class at Clemson.

H. H. Willis, director of the textile department, Clemson College, S. C., has announced that Henry C. Robertson, senior specialist in cotton classing, Bureau of Agricultural Economics, Washington, D. C., will teach the class in cotton grading to be held at Clemson from June 6th through July 2nd this year. This course is designed for both beginners and those experienced in cotton grading, in that Mr. Robertson will demonstrate the Universal cotton standards for grade and staple to each student.

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## Georgia Tech Receives New Machinery for Textile School.

The Textile School of the Georgia School of Technology, Atlanta, Ga., has received two new machines for use in the knitting department. The Hemphill Company, through its Chattanooga, Tenn., office, has recently installed one of their late model Banner knitting machines. This machine is equipped with an ingenious mechanism to control the plaiting of yarns of various materials and colors; it is simple, yet positive, in action. The Southern Textile Machinery Co., Paducah, Ky., has installed in the school one of their Steady Dial loopers, equipped with tension regulating devices, stop motions, and an effective trimmer. The parts which come in contact with the operative's hands are made of Monel metal.

## Annual Engineers' Show at Texas Tech School.

The annual Engineers' Show at the Texas Technological College, Lubbock, Texas, was held on April 15th and 16th. The primary purpose of the show is to interest high-school students in engineering, and the textile engineering department does its share in making the show a success. A complete miniature mill was in operation for processing cotton and wool, the materials used being grown under the supervision of the college's School of Agriculture, on the college farms.

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## Sherwin-Williams Holds Educational Meeting.

About 200 maintenance men from leading textile mills, painting contractors, mill engineers and architects attended a dinner meeting given by the Sherwin-Williams Co., at the Chamber of Commerce Building, Charlotte, N. C., on March 22nd. Emmett Stegar, manager of the company's Charlotte branch, was in charge. The meeting was educational in character, with experts from the Cleveland factory of the company giving practical demonstrations of paints and painting programs for various purposes, mills, office buildings, homes, etc.

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## Watson-Williams Contributes Equipment to N. C. State School.

The Watson-Williams Company, Millbury, Mass., has donated to the textile school of N. C. State College, Raleigh, N. C., a number of harness shafts for dobby looms and a variety of shuttles for weaving cotton rayon and chenille fabrics. H. J. Watson, assistant general manager of the company, is an alumnus of this school.

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## Bulletin on Water Filters and Filtration Equipment.

"Water Filters and Filtration Equipment" is the title of a new 28-page bulletin issued by The Permutit Company, 440 Fourth Avenue, New York City. It describes the principles of filtration, the pretreatment of different classes of waters, the various types of chemical feeds, vertical and horizontal pressure filters, concrete and wood gravity filters, activated carbon filters, etc.

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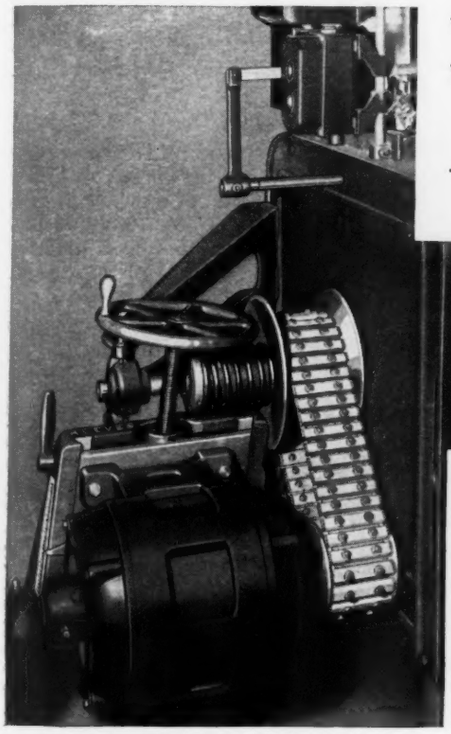
A. D. ZELLNER, an undergraduate in the A. French Textile School of Georgia School of Technology, Atlanta, Ga., has been awarded one of the scholarships given by the Textile Foundation. Mr. Zellner, a resident of Forsyth, Ga., has made an excellent record at Tech, and plans to use this scholarship in continuing his studies there.

# REEVES★ announces a remarkable new SPINNING and TWISTER FRAME DRIVE

## with AUTOMATIC variable speed control

—giving uniform tension and twist on the yarn at all times



Front view of REEVES Drive, showing motor on vertical sliding base, adjusted for starting speed by handwheel at top. As motor moves down, V-disc pulley on cylinder shaft expands, giving a faster driving speed.

Rear view, showing ratchet actuated by arm leading from traverse shaft of spinning frame. Automatic movement of ratchet gradually moves motor down, increasing speed of bobbins and front rolls.

### ADVANTAGES:

1. Uniform tension on yarn from empty to full bobbin.
2. Better quality of yarn—more uniform in size—greater breaking strength.
3. Faster production and larger packages.
4. Instant speed adjustments for different yarn numbers.

● This modern, compact variable-speed drive definitely solves a serious problem that for many years has confronted textile engineers in the operation of ring spinning and twister frames.

With constant-speed drives, there has been no way to maintain an even tension and twist on the yarn. As the diameter of yarn on each bobbin increases, the tension of the yarn *actually decreases,* causing the yarn to have uneven tension, uneven twist and uneven strength.

### Speed Increases as Bobbins Fill

With the REEVES Drive, *automatic* variable speed regulation is provided. The proper starting speed of the cylinder (for empty bobbins) and maximum speed (for full bobbins) are established on a convenient speed indicator. Then, as the bobbins gradually fill, the *speed automatically increases* in the proper ratio up to the maximum limit, giving uniform tension on the yarn from empty bobbin to full bobbin. This automatic speed variation, under positive control, insures a better quality of yarn, of more uniform size, twist and strength, as well as faster production. The increased production alone pays for the drive in short time.

***This complete drive, with its automatic variable speed facilities, requires no more space than the ordinary constant-speed individual motor drive.*** Readily installed on frames now in service, for either warp wind or filling wind. The entire mechanism of the drive and the automatic control is quickly understood by any operator. Speed settings for various yarn sizes quickly established. No costly delays!

### Proved in Actual Mill Installations

The REEVES Drive has been perfected and approved after an extended period of development and refinement, including exacting tests in a number of mill installations. It is offered with full assurance of efficient, dependable performance—backed by the long-established REEVES reputation.

The mechanical details of this money-saving drive, and its many distinct advantages—together with charted results of exacting tests—are fully described in REEVES Bulletin No. T-200. Send for your copy.

★ REEVES is the leader in the specialized field of speed-control engineering and equipment, being also manufacturer of the well-known REEVES Variable Speed Transmission—more than 60,000 now in use.

**REEVES PULLEY COMPANY, Columbus, Indiana**

Please send Bulletin T-200, illustrating and describing REEVES Variable Speed Drive for Spinning and Twister Frames.

NAME_____

COMPANY_____

ADDRESS_____

# NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

R. H. ARMFIELD, for three years assistant superintendent of the White Oak plant of the Proximity Mfg. Co., Greensboro, N. C., has been made superintendent, succeeding the late THOMAS E. GARDNER.

W. H. TAYLOR, general manager of the Slater Manufacturing Co., Slater, S. C., has been elected a vice-president of the company, and JAMES LYBRAND, JR., office manager, has been made assistant treasurer.

C. C. ROBERTS has resigned as overseer of carding at the Brookside Mills, Knoxville, Tenn., to become overseer of carding at Mill No. 4, Pelzer (S. C.) Manufacturing Co. He is succeeded at Brookside by LOYD OTT, assistant overseer, who was formerly at Warrenville, S. C.

A. K. WINGET, of Gastonia, N. C., secretary and treasurer of Textiles, Inc., Sales Co., has assumed new duties as president of the Wiscassett Mills Co., Albemarle, N. C. He will retain a directorship in Textiles, Inc.

J. A. SORRELLS has retired from active service as superintendent of the Gainesville (Ga.) Cotton Mills. Mr. Sorrells had been associated with this company for more than 30 years.

KEMP P. LEWIS has been made president of the Erwin Cotton Mills Co., West Durham, N. C., succeeding the late W. A. ERWIN. THOMAS H. WEBB, treasurer of the Locke Cotton Mills Co., Concord, N. C., is now president, succeeding the late Mr. Erwin, and C. W. BYRD, formerly assistant secretary and treasurer at Locke, is now secretary and treasurer.

BROWN MAHON has resigned as vice-president and assistant treasurer of the Judson Mills, Greenville, S. C., with which he had been associated since 1914, having been made vice-president at the age of 21 years in 1919.

GEORGE P. ENTWISTLE, president of the Pee Dee Manufacturing Co., Rockingham, N. C., is now also president and treasurer of the Entwistle Mfg. Co., succeeding the late WILLIAM ENTWISTLE. WILLIAM HARRY ENTWISTLE has been made vice-president and general manager.

JOSEPH C. COBB has been made general overseer of night spinning and warp preparation at the Lancaster (S. C.) Cotton Mills Co.

J. O. EDWARDS has resigned as superintendent of the Rhodhiss Mills Co., Rhodhiss, N. C., a position he has held for the past eight years.

JOHN M. CURRIE has been made superintendent of Mill No. 2. Entwistle Mfg. Co., Rockingham, N. C. He was formerly assistant superintendent.

J. J. SAUNDERS has been made superintendent of the Paola Cotton Mills, Statesville, N. C., succeeding the late R. L. POOVEY.

J. L. MASON, 224½ West Main St., Gastonia, N. C., formerly purchasing agent for the Manville-Jenckes Co., Gastonia, is now acting as purchasing agent for Parkdale Mfg. Co., A. M. Smyre Mfg. Co., Ruby Cotton Mills, Groves Mills, Dixon Cotton Mills, Trenton Cotton Mills, all of Gastonia, and the Morrowebb Cotton Mills, of Dallas, N. C.

ROBERT E. STEERE, Pawtucket, R. I., is now associated with Curtis & Marble Machine Co., Worcester, Mass., manufacturers of finishing machinery for all kinds of fabrics. He will act as a general representative for the company and will devote the greater part of his time to New England territory. Mr. Steere was for 14 years associated with Lorraine Mfg. Co., Pawtucket and Westerly, R. I.; and was also with Nashawena Mills, New Bedford, Mass.; and the Manville Co., of Woonsocket, R. I.

G. D. DAVIS has been made general sales manager of three of the five divisions of the National Oil Products Co., Harrison, N. J., it is announced by C. P. GULICK, president. Mr. Davis will direct the sales of Euthol, Nopco cleansers, and Nopco industrial oils. Mr. Davis joined the company in 1918 as shipping clerk.

B. A. BASSETT has been placed in charge of the reed division of the southern plant of the Steel Heddle Mfg. Co., at Greenville, S. C. He is a well known reed expert.

J. H. WINDLE, formerly northern and export agent of the Woonsocket Machine & Press Co., and Fales & Jenks Machine Co., and more recently machinery agent with headquarters at 30 Olneyville Square, Providence, R. I., has become vice-president and director of The Standard Mill Supply Co., of Providence, and has joined the organization. He has had over 30 years of experience in designing machinery, mill engineering, manufacturing and cotton machinery problems.

HERMAN NOVA has been made general manager of the Shambow Shuttle Co., Woonsocket, R. I. He is well known in textile and machinery circles, having been associated with the American Felt Company and later as assistant manager with the Woonsocket Machine & Press Co., Inc.

## Obituary.

J. CHESHIRE WEBB, president of the Eno Cotton Mills, Hillsboro, N. C., died at his home on April 13th, following an attack of paralysis. He was 52 years of age, and is survived by Mrs. Webb and two children, Joseph and Miss Elizabeth, both students at the University of North Carolina.

THOMAS LUTHER ELLIS, for over 13 years foreman of the blanket weave room in the Draper-American Mill, Draper, N. C., died in Draper on March 7th, following a short illness. He was 54 years of age, and had been with the Carolina Cotton & Woolen Mills Co. at its Draper plant since 1914.

THOMAS E. GARDNER, for a number of years superintendent of the White Oak plant of Proximity Mfg. Co., Greensboro, N. C., died of a self-inflicted revolver wound on Saturday, April 9th. He is survived by his widow and three sons, Marshall, Herman and Howard.

E. A. FRANKS, superintendent of the Brookside Mills, Knoxville, Tenn., died at the age of 57 years on March 20th, following a week's illness. Mr. Franks had been at Brookside less than a year, having previously been superintendent of the Dunean Mills, Greenville, S. C., for about ten years. He was chairman of the weavers' division of the Southern Textile Association. He is survived by Mrs. Franks and one son and four daughters.

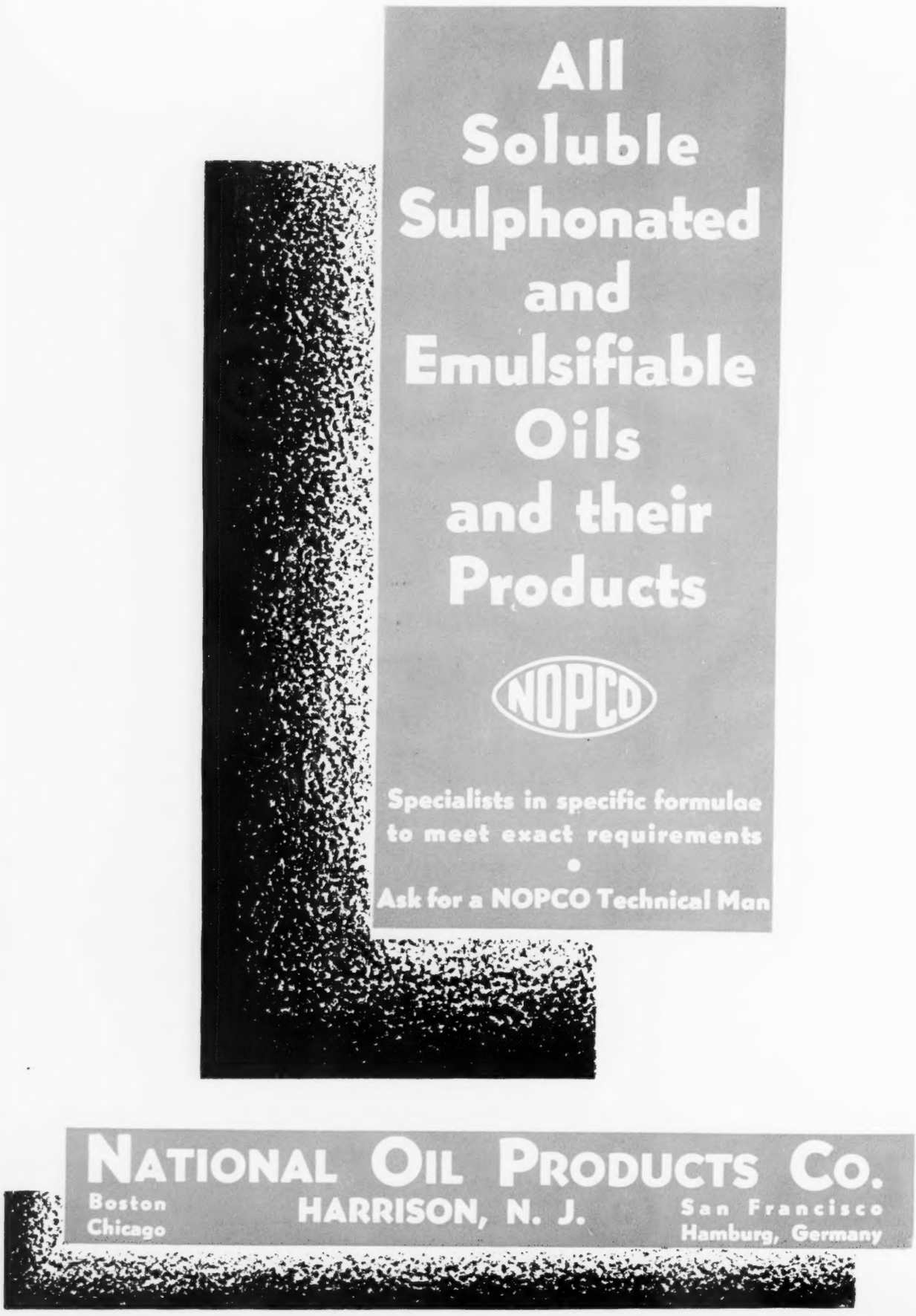
# NO HAND KNOTS IN THIS WINDING

In the *Automatic Spooler,* Barber-Colman Company is offering to the textile mills *a machine that is truly unique.* The use of the automatic tie-up, whereby the new bobbins are tied into the spool (or cheese, as it is called) *by machine instead of by a hand knotter,* makes this machine stand out in marked contrast to all other systems of yarn winding or spooling. *Consistently high quality work* is a natural result, as the machine is not subject to those human errors caused by fatigue, carelessness, indifference, or excessive hurrying. Also, the machine will maintain this uniformly high quality work *with only average reasonable supervision* and will continue to do so day in and day out *at a greatly reduced cost.* Furthermore, the *Automatic Spooler* is responsible for 80% to 90% of the weave room benefits derived from the use of the Barber-Colman machines. Textile mill executives—*investigate these statements!*

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS

FRAMINGHAM, MASSACHUSETTS GREENVILLE, SOUTH CAROLINA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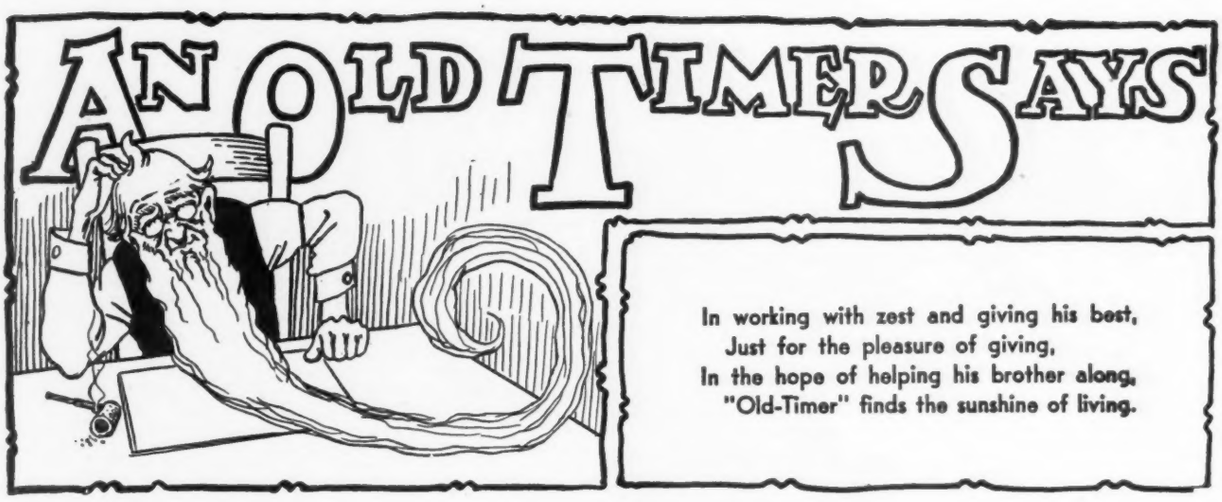

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

IF YOU readers had the opportunity of glancing through our files of "fan mail" which has come to us from readers all the way from Maine to Texas, and from some in foreign countries, concerning the OLD-TIMER Department, you could realize how much both the Editor and OLD-TIMER appreciate these expressions, and that we are eager to continue to be of service to our readers.

For the past several months we have been publishing consecutively installments of the series, "The Story of OLD-TIMER's Methods of Working and Management."

Although OLD-TIMER's main object is to give his readers the benefit of his long and varied experience and to inspire his brother mill men to improve their jobs as well as their personal efficiency and knowledge, we find from reading the "fan mail" referred to that we have a host of readers who look forward to the coming of COTTON each month in order to read the OLD-TIMER page for its psychology, sirology, or whatever you wish to call it. These readers are not as much interested in the technical phases of OLD-TIMER's articles, which represent the main theme of the series referred to, as other readers are.

Inasmuch as it will take several months to finish the series. "The Story of OLD-TIMER's Methods of Working and Management", we are somewhat concerned with the interest of these readers in these articles. In other words, we would like to have expressions from our readers as to whether you are likely to get "fed up" with such a series in which the technical slant predominates. Therefore, we are going to interrupt the series with a few of the other type of OLD-TIMER's articles, such as the one appearing this month, at least until we hear from you readers as to whether you wish the series to run continuously or to be interrupted.

We shall accordingly deeply appreciate an expression from OLD-TIMER's readers on this point.—THE EDITOR.

# Follow the Leader!

FOLLOW the leader! Of course you have played the game when you were a kid, but do you realize how persistently you have followed the leader all through your working life? Stop now and think. Hasn't every ambition you have ever had, been prompted by the example of someone else? Right now I am reading a book about Bismarck which my brother sent to me Christmas. What do I get out of reading it? I am reading the life of a great man; an eccentric man; a man who was never satisfied with any achievement. The writer says of Bismarck: "If he had conquered the world he would have been a disappointed man." Why? Because there would have been nothing left to conquer. No sooner had he achieved one political office, in his early life, than he at once began laying plans for a step higher.

Holy smoke! Here I am raving about the very thing I started out to explain that *you* had been doing all your life.

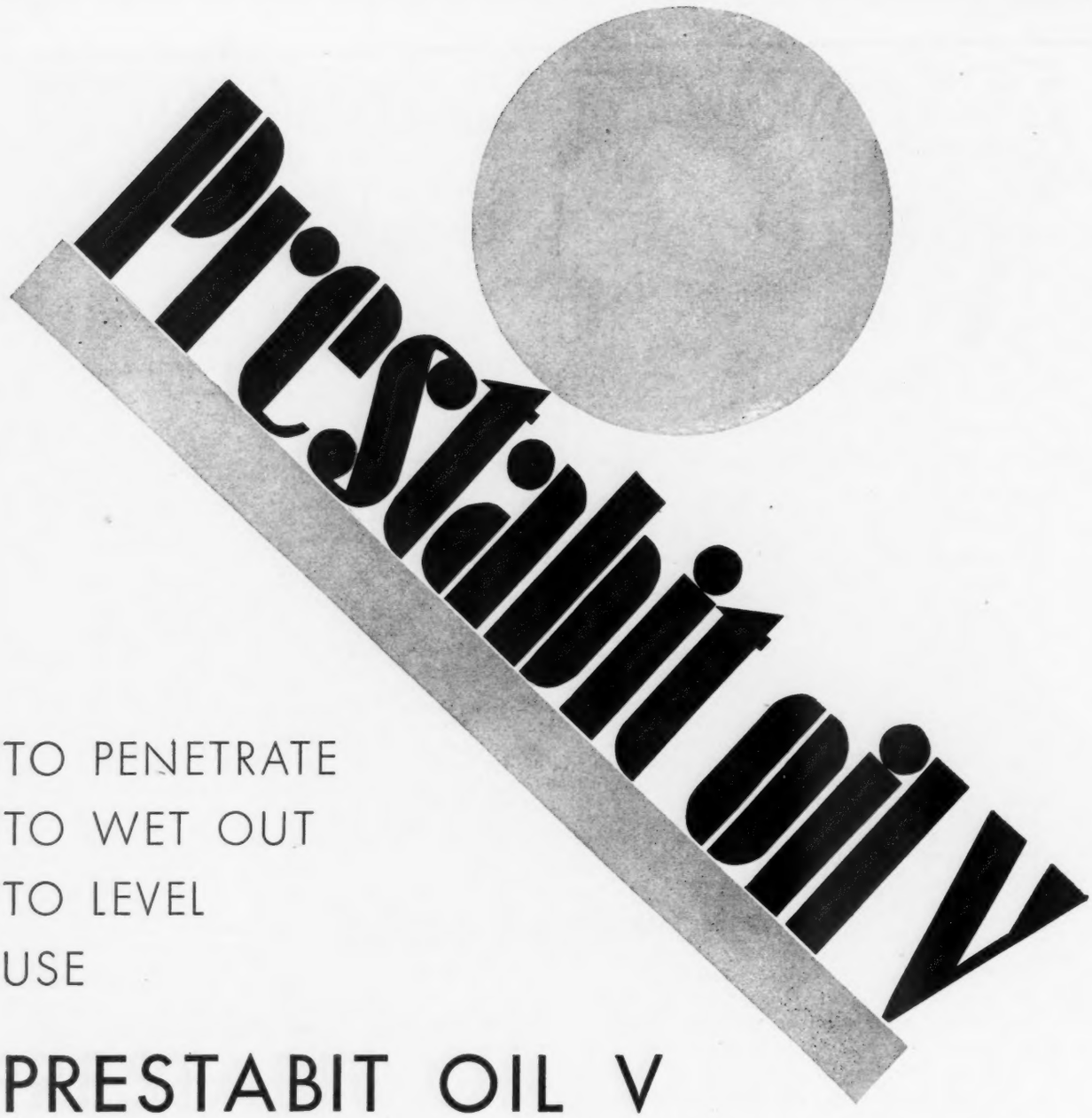
Follow the leader. Sure! That is what I am getting out of reading Bismarck. In talking of the Prussian military service, he said in a letter to his mother: "It is my misfortune that every post (meaning position) I obtain seems desirable to me until I occupy it, and then I find it burdensome and a bore." What language or words could better explain any young man's feelings as he advances from one position to another?

The disposition of Bismarck was explained in his own words, spoken in a vein of fault-finding, but showing truly what kind of personality he really was; showing that everlasting desire to go forward; to make one success a stepping-stone toward the next, a greater success.

I say, as I read about such men, I have thoughts concerning my own work which I like to parallel with the accomplishments set forth and acquired by these men.

Follow the leader! Reading the picture of how hard he worked, how he studied, how he planned every move and how he enjoyed his work—at the same time I cannot help but plan how I am going to help the production, lower the cost and improve the efficiency or do something to improve my job.

As a young man, Bismarck had been put in charge of the dykes, and he writes his mother that when he stands in the water half the night directing the men at work he is enjoying himself. If that kind of a man won't give you inspiration; won't spur you on to "follow the leader"—then you had better look up the old tool box and wrenches and ask some tolerant overseer to give you a job running a section.

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TO WET OUT
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The least sensitive oil to acids, lime and magnesium salts.

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## GENERAL DYESTUFF CORPORATION

230 FIFTH AVENUE, NEW YORK, N. Y.

And of course you remember that operative who saved his nickels and dimes until he had a little stake to enable him to go to school and you see him now a successful overseer or superintendent. Well, brother, he is a Bismarck too; he deserves just as much credit as the great Bismarck, or Napoleon did.

And, by heck, the textile mills have got Bismarks, and Napoleon's too.* Men who have make their marks, so to speak. They are leaders in the mills just like the men in history we read about were leaders in their different vocations.

We look at such men in their present positions and think they have been lucky, but do not realize the hardships they have gone through to fit themselves for their positions; how some of them have made personal sacrifices to obtain their education; how they have done without the things a lot of young fellows were enjoying at the time; how they have diligently applied themselves to their work when the other fellow was loafing or enjoying himself in some other way; how they have sought the advice of older heads; how they have analyzed that advice and applied it to their plans; how they have been honest and square in their dealings—I don't mean business dealings—with their associates; how they have told the *truth* to their superiors, and let the chips fall where they may.

Luck? Yes, and you would be lucky too if you would apply yourself as they have done; if you would study your work as they have studied theirs; if you would not be satisfied with the way things have always been done, but would set your brains to work and find a better way to accomplish the same results; if you would get some pep into your work; encourage your perseverance some, yes, a lot.

Keep ever before you the slogan, "Would I Hire Myself for My Job?" when you are confronted with a problem. Keep everlastingly at it until you win. Gene Tunney set out to be the world's heavy-weight champion. He was greatly handicapped with weak hands which he often broke in his fights. He had an injured elbow that gave him all kinds of trouble. He had no income, no money, but he took any job he could earn a living at to enable him to continue with his fixed plan. He put his brains to work studying every angle of the pugilistic game. He had enough discouragements to have stopped a dozen less persistent men. Still he planned and trained for seven long years to make Old Man Opportunity come to him. In his road work he practiced running *backwards* for two miles every day because he knew he would have to be able to get away from Jack Dempsey's rushing punch.

He did not sit around waiting for Opportunity to knock at his door. He built the door, and then went and got Old Man Opportunity and made him knock on the door he had taken seven years to build.

You have got the brains, brother. Now, have you got the determination to set the task for yourself and hang on until you reach the goal?

Even the man who shines shoes better than anybody else deserves credit for his success. Follow the leader. That is a natural instinct for a human being just like it is for all the lower animals. Let one sheep jump the pasture fence and all the rest of the sheep will jump it too, or at least every one of them will make the jump?

Are you trying to follow your leader? If you fail to jump the fence the first time do you quit, or have you got the backbone to keep on trying until you do make the jump?

Study the lives of successful men. See how they failed to follow the leader the first time, and then see how they made a study of the situation to find out just what kept them from making the grade the first time. Probably it was the lack of education. Then see that man go to studying, gaining knowledge from every angle and all the time thinking of the goal for which he is striving. Abe Lincoln, while working in the day time, would save all the pine knots he could find, take them home at night and build a fire so that he could have a light by which to study a law book he had walked eight miles to borrow.

Now, you have electric lights, a good warm house, and a public library from which to get the books. But, are you taking advantage of your wonderful opportunity?

Opportunity is knocking at your door every night as soon as you have eaten your supper. Opportunity is begging you to study the lives of great men, hoping that you will be inspired to "follow the leader."

Hoping you can see how easily you can add to your store of knowledge if you can stay away from the barber shop, or wherever you loaf, long enough to get interested in your reading.

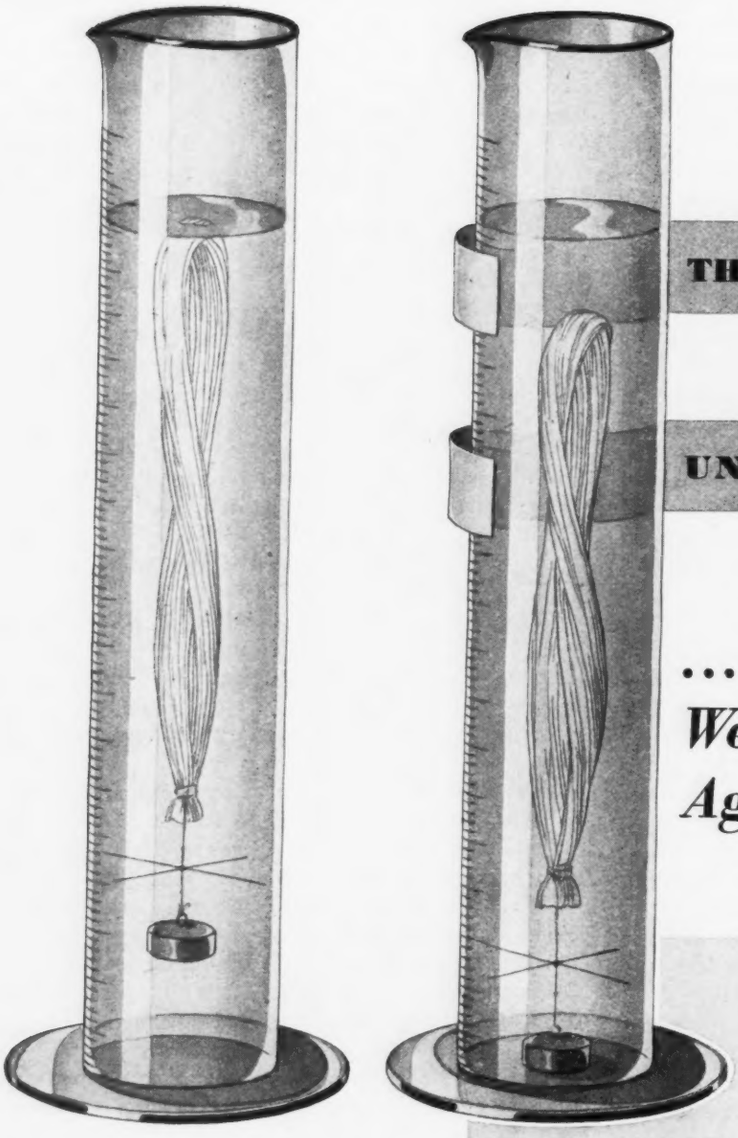
A recent letter from a reader who took one of the OLD-TIMER study courses, says in part: "I am gaining in knowledge—the course is so interesting—my vocabulary is increasing," etc., etc. He is enjoying his study course because he knows it is making him a better man. He has got something to look forward to. He sees a goal ahead and he is dreaming of attaining that goal. He is taking more interest in his work. He is studying (not just reading) every article in the textile magazines. He is going to win promotion, fellows; nothing can stop him.

Incidentally, this man is working in a mill that OLD-TIMER started up years and years ago, but he does not know OLD-TIMER or have any idea that he is looking after machinery that was put in and started up by the man who is now trying to do everything he can to help him win promotion.

Yes, Mr. Superintendent, I am talking to you, too. Don't get it into your head as you read this that these pleadings just fit that overseer of yours or that assistant overseer. It matters not if you have got the biggest job in the country, if you will accept this reasoning as *yours* and quit thinking about the other fellow, you will be surprised how you can improve your store of knowledge.

Not with any sense of egotism, I am going to relate a personal experience to you. You don't know me anyway, and therefore can't criticize me for using

*When we read this statement, the names of James A. Chapman, Jr., Carl Harris, Stanley Black, B. C. Baker, and others, immediately came to our mind as typical of the kind of men Old-Timer had in mind at this point in his article. These fellows are in our own personal acquaintance, and, in case you do not know them personally, you can undoubtedly make up a mental list from among your own acquaintances.—The Editor.



*The above illustrates the evaluation of Wetting-out Agents by the Draves-Clarkson Method.*

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**UNIFORM APPLICATION**

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THOROUGH penetration is essential to the uniform application of dyestuffs.

*Wetting and Dispersing Agents*—

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Alkanol B
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*Dyeing Assistants*—

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Our technical service department will be glad to assist you in the application of these products to your work.

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**E. I. DU PONT DE NEMOURS & CO., INC.**

***Dyestuffs Division, Wilmington, Delaware***

SALES OFFICES: Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., and San Francisco, Calif. Represented in Canada by Canadian Industries Limited, Dyestuffs Division, Canada Cement Building, Montreal, Canada

the personal pronoun, just once.

I enrolled for a correspondence course when the first textile courses were put out in the form of little pamphlets. I finished that course and took another one. I secured the agency and sold more than enough to pay for my courses. I continued until I had taken them all. Then after taking mechanical drawing I ran out of something to study. Looking over a magazine one night I saw the ad of a law course, and I sent the first payment for it next day. If the knowledge I got out of that law course could be bundled up and sold, $5000.00 would not buy it from me today, and that has been many years ago.

I have asked your indulgence in relating this personal experience to bring out one point, and that is: You can't take up any kind of constructive reading or study without adding to your store of knowledge, and there never was a time in the history of the world when it was so true that—

*"Knowledge Is Power".*

It matters not how successful you are in running the job you have, you can not only derive a great deal of pleasure out of adding to your store of knowledge, but it will bring compound upon compounded interest to you.

Yes, I heard some of you when you said, "Oh, I am too old. OLD-TIMER is not talking to me." Pardon this statement, but—I am too far away for you to hit me, and I am going to say it—

You may be too darn lazy, but you are *not* too old. Remember the article entitled "Never too old?" Well, OLD-TIMER worked over two months getting up concrete evidence to prove that a man *never* gets too old, before he gave the information to you in that article. It appeared in COTTON at the time when the daily papers and magazines all over the country were discussing the action of numerous firms that were laying off men over 40 years old and putting in younger men. May I suggest that you look up that article and read it again, and if OLD-TIMER doesn't convince you, then write the Editor of COTTON and tell us why.

(We shall be very glad to supply you with a copy of the article "Never Too Old", which Old-Timer has just mentioned if you will ask us for it.—The Editor.)

It is a natural born instinct for an animal to follow the leader. Did you ever see a herd of animals that did not have a leader? Did you ever see a drove of horses that did not have a leader? Did you ever see a herd or drove of any kind of animals that did not have a leader?

We are animals, you know, even if we are also human beings, and if we don't follow that animal instinct to follow our leaders—well, I say again, we are just too darn lazy.

Henry Ford was 45 before he got started. L. S. Starret was past 50, deaf and broke, then he died a millionaire. Space will not permit elaboration on the many, many lives of great men who have risen to favor and fame after the age when many people think they are too old.

*Follow the leader.* Child's play, you say, but the instinct in all of us. Some few have the bull-dog tenacity to play the game—stick to the finish. We are traveling a one-way street, brother. We are not coming back. You can't buy a return ticket. If you want to be happy, you must achieve; you must grow; you must *follow the leaders.*

P. S.—If you have got the ambition to make a start, and if you want to make both yourself and OLD-TIMER happy, just pick up your scratch pad right now and say: "I am going to start," drop it in an envelope and mail to OLD-TIMER, c/o COTTON, Atlanta, Ga. You need not even sign your name if you don't want to. Just give us the satisfaction of knowing our efforts have encouraged you to add to your store of knowledge. If you are seriously interested in taking up one of the study courses that will help you improve yourself, tell me so and I will send you the necessary information.

If we can be of any assistance to you we are ready.

## A Good Book for the Textile Manufacturer to Read.

How much profit should you make? How shall you reduce costs? What determines a profitable price? How shall you make the profit you should? These timely questions are covered in a recent book, "Pricing for Profit", by W. L. Churchill, in which the author courageously approaches these subjects, with a background of 25 years of special study into them as an industrial economist and engineer. The book represents the findings of ten years devoted to a search for the correctible causes of the inadequate earnings of so many excellently managed business enterprises.

The author advocates certain economic laws, derived from his years of research and practice as the answer of how to make business profitable to stockholders, management, employees, and thus to its customers. These laws and their application are fully explained in the book. They cover the entire range of management, costs, price policies, advertising and selling, and profit requirements.

From a wide experience with many and various industries, Mr. Churchill shows how these laws govern profits, how their application assures dividends to stockholders and proper returns to both management and labor, and how their violation inevitably brings trouble in spite of efficiency as measured by the usual business standards.

To men engaged in management in the textile business, which is so hampered by inaccurate and unsound cost ideas and profit and selling policies, the book is commended as a clearly presented and interestingly written discussion of these fundamental problems, containing much of specific and general application to them. The book is published by The MacMillan Company, 60 Fifth Avenue, New York City. The price is $3.00 per copy. Copies may be secured through COTTON's book department.

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ROLAND L. LEE, JR., of the staff of the Clemson textile department, Clemson College, S. C., has been awarded a junior fellowship by the Textile Foundation. He will work with DR. H. J. BALL at Lowell Textile Institute. ALBERT G. FISHER, a student of the department, was awarded a scholarship, and will work with H. H. WILLIS and DR. H. L. HUNTER, at Clemson. The Textile Foundation awarded 24 fellowships and scholarships to promote further research in the textile and allied branches.

# Two or Three Process Picking Changed to SINGLE PROCESS

A PROMINENT MILL WRITES:

"In the card room we are getting 10% less strippings and toppings from cards, which shows that less fibres are broken in picking. This means an improvement in the running of our work throughout the mill."

You can have the economy and all the other advantages of Single Process Picking in your mill—using your present machines. By installing our *sensitive synchronization* of all feed rolls and hopper feeder you are assured cleaner and more uniform laps, yard by yard, with less broken fibres.

The savings in labor and power alone will pay for this equipment in less than a year.

Write for information and name of nearest mill using this equipment.

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**FOR ALL TEXTILE PURPOSES**

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*INDUSTRIAL ENGINEERS*

*Specialists in Textile Cost Methods Over 19 Years.*

FALL RIVER MASS. GREENVILLE, S. C.

# HOW OTHER MEN MANAGE

## Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

### Does the Tube Gear of Card Coiler Insert Twist in Sliver?

**An interesting analysis of this question, which answers it. The first two paragraphs we heartily endorse.**

EDITOR COTTON:

Will you please let me tell your readers what a good habit it is to review past articles in COTTON? I have acquired that habit and find it most valuable. Nothing irritates me more than to find after a few moments' reading that I have been reading a newspaper that is even only a day old. With COTTON, however, it is different; many articles which have been written and published a year or more ago are just as valuable now as they were the day they were published. Besides refreshing your mind on a lot of things, you sometimes get a point or two that were missed before. Now is a good time to do that, before the whole twelve of the 1931 magazines are bundled up and put away—where you can get back at them of course.

It will put your mind to working on some things that you may have thought were too trivial to bother with at the time because you were too busy with other more important problems. These little puzzlers, however, give the brains the best kind of exercise because they can be solved with a little effort and help to solve other, bigger problems which are very similar at times.

A case in mind is the simple question asked by "T. R. (N. C.)" in the January, 1931, issue, "Does the sliver receive any twist from the rotation of the tube gear of a coiler on a card?" The answer to that question is of course negative, as a little thought will disclose. This was answered by "CARDER (MASS.)" in the October, 1931, issue in the following manner, "From watching the coiler operate we would assume that twist was being put in the sliver, but by stopping the card and then taking the sliver up for examination we see that there is no twist in it." The question, then, is whether there is or isn't twist in sliver.

Well, I think there is twist in card sliver, but it is not put in by the tube gear; the number of turns though is so small that it is not perceptible in short lengths.

By reasoning we can deduce that no matter what happens at intermediate points between the head end of a strand and the tail end, no true twist can be imparted so long as neither the head end nor the tail end has been twisted and the strand remains unbroken.

In the case of the card, or drawing frame, one end of the sliver is held by the calender rolls and the other end is in the can. Applying the above rule, regardless of the number of turns the tube gear makes, the amount of true twist in the card sliver will be equal to the number of revolutions of the can-bottom gear which revolves the can, thereby twisting the head end of the sliver. Considering the relative speed of the top calender rolls to that of the r.p.m. of the can, the twist per yard is very little; so little that it does not make any difference one way or the other. According to the gearing on a well-known make of card it amounts to one turn right hand twist in eight yards with a 10-inch coiler, while the coiler revolves sixteen turns for each turn of the can and in the opposite direction.

It is of true twist that we have been speaking; that is, actual twist in the sliver after it has been pulled out of the can in strand form. Actually, however, the true twist does not exist while it is in coil form in the can, and shows up only when being pulled out; also, there is a false twist in the can which amounts to one turn for every coil which disappears as the strand is being pulled out. It is no doubt this last condition which puzzled "CARDER (MASS.)".

A perfect example of false twist as against true twist is the action of the false twist tube which is employed by an English machinery builder on a very high draft spinning frame. The system consists of two sets of drafting rollers, one in front of the other. In between these two sets of rollers is a revolving tube through which the roving passes after having been drafted once, and which, as the name implies, inserts a false twist to prevent the fibers from spreading.

This tube in reality, although it serves its purpose, is incapable of inserting any true twist because it turns neither the head nor the tail end. The twist is inserted from the middle, which causes it to be in the opposite direction in the back to the direction it takes in front of the tube. It is for that reason that the twist is false; for example, if one turn of right hand twist goes through the tube, it is immediately neutralized as it emerges by one turn of left hand

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WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or leters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

twist which is in front.

The same thing is true of the tube gear on a card; as it revolves counter-clockwise, looking on top, it twists the sliver above it left hand twist and below it right hand twist, so that one neutralizes the other.

B. F. (R. I.)

## Which Does the Most Combing - the Top Comb or the Half Lap?

EDITOR COTTON:

There has always been a difference of opinion among comber men as to whether the half lap, or the top comb, does most of the combing. In the past a discussion was carried on in COTTON, and we dug quite deep into both sides of the question, but now "R. G. (R. I.)" has raised the old argument again.

There are several ways of proving the question with figures, but before we do that, why not find out just what the theory is in regard to combing? When a man says the top comb does most of the combing he must mean that it does more than 50 per cent of the work. One subscriber even put in his article the per cent he thought the top comb did. *My idea of the reason for combing cotton is to remove short fibers from the mass of cotton, and parallelize the balance.* Don't misunderstand this statement, for I know a comber cleans, and drafts and doubles, and therefore evens the sliver, but these are secondary rather than primary requisites. The only reason that combers were ever built was to remove short fiber. If this were not so, they would be differently constructed.

The card was built to clean, and the drawing frame was built to attenuate and double, and while both these machines do a certain portion of the other's work, it is only because it is necessary in doing their own work. The card has to draft in order to get a small tuft of cotton for the licker-in and cylinder and flats to work on. This drafting, of course, helps in the cleaning. Now the drawing frame shakes out some dirt, but only because it is drafting, and theoretically, this shouldn't be so, for the fibers are supposed to be cleaned in the previous processes. All these examples prove the purpose of combing.

Now, if a man says the top comb does more than 50 per cent of the combing, he can mean only one thing, and that is that the top comb removes more than 50 per cent of the short fiber, and does more than 50 per cent of the parallelizing. This idea, I do not agree with, and never have. In studying over some of the previous articles on this question, it seems that some of the top comb boys think that if a fiber 1¼-inch long is drawn its full length through the top comb, and only acted on part of its length by the half lap, then that necessarily means the top comb is doing most of the work. "R. G. (R. I.)" in his article of December, 1931, on page 1354 says, "I wonder if he (meaning me) ever had some one turn the comber over for him by hand while he watched the top comb and half lap doing their work. If he will try this, he will see that there is more cotton drawn through the top comb than the half lap passes through. He will also see that the half lap just combs the head ends of the fibers preparing them for the fluted segment and the leather detaching roll, and that the top comb is in the cotton just forward of the point where the nippers held it." This is all very true, but only shows that the good fibers are pulled through the top comb as they go forward. My explanation follows and explains just what happens, as I see it.

When we put a lap of cotton into a comber it is supposed to be well carded, and even in weight, and the fibers laid parallel. The usual practice is to use a sliver and ribbon lapper to prepare the card sliver into a lap suitable for combing. In extreme cases where quality is a prime requisite one process of

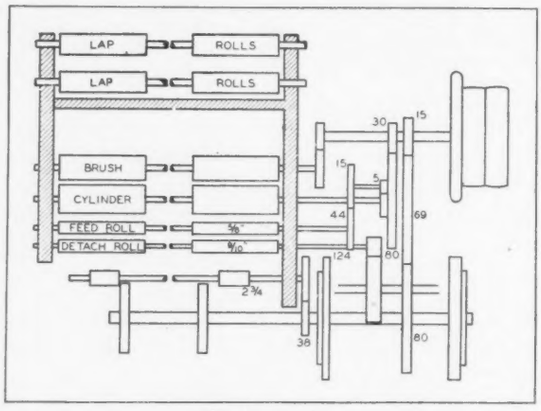


Diagram A.

drawing is used between the card and sliver lapper. Certainly any mill man will agree that we have used extra care in the preparation of our stock for combing. Just visualize this lap of cotton coming to the feed rolls of a comber, all fibers laid parallel, but short fibers mixed with the long.

Now, referring to Diagram *A*, you will see that the ⅝-inch feed roll make 1/5 of a revolution while the cylinder shaft makes one revolution. Therefore, there is .393 of an inch of fringe of fibers presented to the half lap. $\frac{⅝'' \times 3.1416}{5} = .393$ inches delivered by 1/5 revolution of the feed rolls. This fringe of cotton must be held by both the nipper knife and feed roll, as is proved by the fact that if you get a roll lap on the end of the feed roll, the half lap will pull a bunch of cotton in through the bite of the nippers. Therefore, the combing or pulling action of the half lap must be felt beyond the bite of the nippers. As the half lap turns, it combs the .393-inch of cotton and drags out the short fiber because these short fibers cannot be held by both the nippers and feed roll, owing to their short length. Of course the long fibers have only been combed .393-inch of their length by the half lap.

For example of just what happens, let us consider we are combing 1¼-inch cotton. There are some fibers ¾-inch long, and of course these are what we are trying to remove. We will suppose the end of some of these ¾-inch fibers is ¼-inch back in the fringe of the cotton when the half lap starts to comb. We know that its action covers .393-inch, proven by figures, and this leaves .393 — .25 = .143-inch of the

short fiber for the half lap to pull on. When the 17 rows of needles have dragged on this short cotton it is going some place, even the 17 rows only have a little more than ⅛-inch to grip, because its rear end is not far enough back to be held by both the nippers and feed rolls. Of course, I will admit there is a point where a short fiber could lay in the mass, where it would be just out of reach of the half lap and might go forward into the work, if it were not for the top comb. A comber is no more perfect in its purpose than any other machine, and I do not claim that it separates every short fiber into waste and every long one into good sliver, but it acts on the bulk.

Now we must consider the action of drafting and its relation to the top combs' work. There is a draft of approximately 10 between the feed rolls and the table calender rolls.

$$\frac{44 \times 5 \times 80 \times 15 \times 38 \times 2.75}{15 \times 1 \times 30 \times 80 \times 124 \times .625} = 9.9 \text{ draft.}$$

We know there is no draft in the sliver pan except what pull there is through the trumpet, so that most of this draft is between the feed rolls and the detaching rolls. It is a physical impossibility for the detaching rolls to pull out more than 10 per cent of the fibers on each piecing-up, owing to the draft, and I think all comber men will agree that only the longest fibers are pieced up. Now in this drafting action, as the long fibers are pulled out, and as the nippers are open, the long fibers drag along some short ones and the top comb holds them from going on. But, the top comb does not remove them, it simply holds them in the fringe of cotton so that the half lap gets them on its next revolution. I think this shows that the half lap is of primary importance.

Now it was suggested I try some color mixed with white and turn a comber by hand to see where the color goes to. I have done that, and am even stronger in my faith in the importance of the half lap. Let any comber man try this one, and I think he will be convinced. Set a comber for 1¼-inch cotton, and time it to take out 20 per cent waste. Get the comber ready on the regular stock 1¼-inch long. Now dye black 20 pounds of ¾-inch cotton, being careful in stapling that it is ¾-inch. Mix this black ¾-inch with 80 pounds of white 1¼-inch stock, mixing well behind the breaker picker, and run it the regular way up to the comber. Bear in mind you have lost more black than you have white owing to its shortness, and of course your ribbon lap will not be as good as when you use all 1¼-inch cotton. Your comber lap will be a light grey color. Put this into your comber and comb it. When you have run a few pounds, stop the comber, and match up your colors. You will find the comber sliver the lightest grey, the comber lap the medium color, and the comber noil the darkest color. Your top comb will not have much of anything on it, but what little there is will be about the same shade as your noils. If you do not get this result you are certainly putting good fiber into your waste, with your setting and timing, and the shade tells the story. I said in a previous paragraph that a comber was no more perfect than any machine. If this were not so, if your stapling was perfect in making this test, your comber lap would be gray in color, the sliver white, and the noils black.

One final proof of which does the most combing: Take a comber that is absolutely clean of all stock and put in your laps and start it; you will get noils from the half lap as soon as you get sliver at the front. Let the comber run for one hour; you will get plenty of waste in the noil can, but look at your top combs, they will have only a very thin collection. The "top comb" boys cannot say that the top comb removes short fiber and then transfers it to the half lap to put into the waste, because the angle of the top comb is such that it holds whatever it gets.

I hope this discussion will bring out other comber men to express their ideas. Combing is a trade that requires precision and thought, and we all can develop by thinking all around this subject. I am glad that "R. G. (R. I.)" had the courage of his convictions, and was willing to express them, and hope he will criticize my thoughts in a constructive manner, as I have tried to do concerning his article.

M. W. H. (MASS.)

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## Further Discussion on Controlling Bad Work From Card Room.

**This contributor says fanning off causes a great deal of black work.**

EDITOR COTTON:

I would like to offer a few remarks on controlling bad work from the card room, which seems to have had the right of way in COTTON recently.

Starting in with the cards, my first suggestion would be to not allow any fanning off at the cards. I think it a better plan to use a mop made from hard waste and fastened to a broom handle. The cards should be gone over at least twice a day, preferably in the morning and afternoon. Between these times the fronts of the cards and the licker-in covers should be wiped off with a piece of card stripping. The front should be wiped off at each stripping and once between strippings. All surplus oil should be kept wiped off the comb boxes and coiler heads.

I believe that any remarks regarding overhead cleaning in one department are just as applicable in any other department. When blowing down or brushing down overhead, I think the machines should all be covered. I use paper for this purpose as it can be used over and over. All of the overhead cleaning should be done at noon time while the machines are standing, and any droppings that happen to get into the work or onto the machines should be picked out.

Drawing frames should be well cleaned with card strippings, and the top and bottom clearers kept well cleaned. It should also be seen that good cloth is kept on the clearer rolls at all times. All oil or oil that has run out of the grooves of the coilers should be wiped off. All bad work possible to remove should be removed at the drawing.

The tops of the spindles on both slubbers and speeders should be kept clean. The rolls on these machines should also be kept clean, and all oil kept wiped off. A little whiting should be used when piecing up during creeling. When piecing up, the operatives

should not be allowed to make long piecings. The ends should be twisted together evenly. The tops of the creels, carriages, spindles and guides should be kept clean. The flyers should be cleaned at each doff. Fanning off should not be allowed on these frames, but a mop should be used.

The roving should not be thrown into a box but should be carefully stacked so the oily ends of the bobbins will not come in contact with the roving. We use a box with a slatted bottom so that no waste or lint will be able to accumulate in the bottom.

We instruct all frame hands to keep a sharp lookout for black or imperfect roving when setting in a new creel. We have each frame hand to mark his or her roving and allow so many bobbins per day of bad work and let them know that over that amount they will be fined so much for each bobbin over. We have found that using air to blow out our bobbins saves us a lot of black work.

T. H. (N. C.)

## Further Discussion of Raw Stock Dyeing.

An interesting discussion of treating cotton for raw stock dyeing in Chattanooga vacuum machine.

EDITOR COTTON:

I would like to give the experience I have had treating cotton for raw stock dyeing in the Chattanooga vacuum raw stock machine. I am writing this in reply to the questions recently asked by "CONTRIBUTOR NO. 4914". He wanted to know whether in preparing cotton for dyeing in a vacuum raw stock machine it is better to use soda ash for boiling off and wetting out the cotton, or to use some of the prepared soaps. He asked for discussion on sulphur colors. I will be glad to give him the experience of a New Englander.

We use soda ash as a water softener, as our water ranges from three to four degrees of hardness (before the days of filters and water softeners that was considered soft water). We add the soda ash at about 180 or 200 degrees, and run the pump for about 20 minutes. This is then all drawn off and cold water added. When the tank is full the bath ranges from 100 degrees to 140 degrees. We next add the dye liquor, and allow the liquor plenty of time to penetrate to all parts of the tank before turning on the steam. It is a good plan not to heat too fast as it is not desirable to strike the dye onto the cotton and exhaust the liquor, causing uneven dyeing. When the bath reaches 180 degrees we start adding the salt at intervals, as this method will cause the dye to go on the cotton slower and more even.

Adding the dye liquor when the bath is too hot and the careless use of salt is very often the cause of uneven dyeing. A chemical reaction cannot be hurried, and the superintendent or dyer who thinks he can is getting production at the expense of dye and quality.

If "CONTRIBUTOR NO. 4914" is using carded cotton or cotton direct from the bale, he can improve the breaking strength of the yarn, as well as save time in loading and unloading his machines, as follows:

Run the cotton through a tandem opener and a condenser, then through a breaker picker, and instead of allowing the cotton to go through the calender rolls in the regular way, take the cotton as it leaves the top calender and feed it under the lap roll and onto the floor.

I think this is a subject that we should have much more discussion on in the future than we have had in the past. I am sure that there are many readers of COTTON who could relate some very interesting experiences along this line. I would especially like to hear from someone who has had experience running stock dyed cotton in the card room.

R. A. J. (MASS.)

## Roving Frame Cones.

### Why They Are Concave and Convex.

### By Fay H. Martin

WE are very glad to have this clear explanation from Mr. Martin, who is well known in the industry as former manager of the Woonsocket Machine & Press Co., Inc. We feel sure that our readers will appreciate having here his discussion of this subject, recognizing him as an authority on roving frame design and manufacture.

We are pleased to state that, to follow this discussion of cones, Mr. Martin has prepared for us a discussion of the compound on roving frames, in a clear manner, showing how the variable speed of the bottom cone is added to the positive speed of the main shaft. This article will take the mystery out of the compound for you. We hope to use it in an early number.—The Editor.

EDITOR COTTON:

We have noticed from time to time in your publication COTTON, the question, "Why are the Cones of a Roving Frame Concave and Convex?" The question cannot be answered in the brief space of a sentence, for to answer the question correctly, we must first tell in detail how roving frame cones are developed on paper by a draftsman.

A roving frame is made up of four elements—Draft, Twist, Lay and Tension, and in a roving frame, these elements are combined mechanically and must work in perfect unison with each other for the best results.

All roving frames, of whatever make, contain these elements and it is the perfection of the details of them that makes a roving frame efficient. Of these four elements we consider the tension the most important of all and in order for a roving frame to carry a good tension from start to finish of a doff, it requires a perfect pair of cones, a compound figured to the right ratio, and a chain drive with all the "creep" eliminated.

The tension, which is the most important element, is controlled by a pair of cones, consisting of a top cone which is the driver and a bottom cone which is the driven, connected by a belt. This combination produces a varying speed of the bottom cone as the cone belt is moved along at each change of the traverse, and it is this variable speed that winds the roving upon a bobbin.

The gearing on a roving frame is so arranged that the speed of the spindles and bobbins revolve

the same number of r. p. m. Thus if the spindles are revolving 1,300 turns per minute, the bobbins are also revolving 1,300 turns and continue to do so throughout the set, 1,300 at the start and 1,300 at the finish of the doff.

The cones on a roving frame are for the winding of the bobbin, as mentioned, and the variable speed that is produced by the cones is added to the positive speed of the bobbins by the means of the compound, thus making them revolve in excess of the spindle and flyers, and the amount of this excess speed must be equal to the number of inches of roving being delivered by the front roll, (less about 3 per cent for twist contraction) at each layer or traverse. This amount of roving from the front roll is constant throughout the set, thus if the bobbins are revolving 1,300 r. p. m., the surface speed on a bobbin that is 2 inches in diameter would be 3.1416 $\times$ 2 = 6.2832 $\times$ 1300 = 8168.16 per minute, plus 530.10 inches, (this 530.10 inches being the amount of 4-hank roving being delivered per minute with a front roll speed of 150 r. p. m.) = 8698.26 inches which is the surface speed of a bobbin 2 inches in diameter revolving at 1384.36 turns per minute. Of this 1384.36 turns, 1,300 come from the constant speed of the bobbins and 84.36 turns come from the cones.

From the foregoing you will plainly see that the speed of the bobbins has always got to be in excess of the spindles if any winding is done. Now the problem is to figure out and develop a pair of cones that will produce a speed, which, when added to the bobbin speed by the means of a compound, will make the excess surface speed of the bobbin just equal to the amount of roving being delivered by the front roll at each change of the traverse, and when this is done there will be a perfect tension on the roving frame.

The cones are, practically considered, a series of small pulleys joined together, varying in diameter and so arranged that each of the pairs of pulleys will have suitable diameters to drive the bobbins at a correct speed to wind on just the amount of roving delivered by the rolls.

Using a bobbin 1⅜ inches diameter, with a circumference of 4.3197 inches, on the machine, we find that this empty bobbin must revolve at an excess speed of 122.71 r. p. m. to take up the roving that is being delivered by the front roll, which is 530.10 inches per min. In our example, this 122.71 r.p.m., when added to the 1,300 constant speed of the bobbin, will make a total of 1422.71 r.p.m. of the empty bobbin.

We will now suppose that the strand of roving is 1/16 inch in diameter. Two of these strands, one on each side of the bobbin, will increase its diameter ⅛ inch, which, added to the 1⅜ inch empty bobbin will make a new diameter of 1½ inches after one layer of roving has been put on. Now we make a calculation with 1½ inches as the diameter of the bobbin as follows: 3.1416 $\times$ 1.5 inches = 4.7124 inches circumference, which divided into 530.10 inches will equal 112.49 r.p.m. excess speed required to wind on the second layer. We now have a bobbin 1⅝ inches diameter for a new calculation. Proceed as before, only using 1⅝ inches instead of 1½ inches and we find that we have an excess speed of 103.83 r.p.m. required to wind this layer.

Thus you will notice that while the increase in the diameter of the bobbin has been constant, ⅛ inch at each layer, the decrease of the excess revolutions has not been so. In other words, the decrease is not in direct ratio but varies from one layer to another.

A study of Table I will illustrate our point. Please note the difference in excess revolutions, also the per cent of increase of the bobbin from one layer to another.

TABLE I.

| Diameter of Bobbin | Excess Revolutions of Bobbin | Difference in Revolutions | Per Cent of Increase from One Layer to Another |
|---|---|---|---|
| 1⅜" | 122.71 | | |
| 1½" | 112.49 | 10.22 | 9.09 |
| 1⅝" | 103.83 | 8.66 | 8.33 |
| 1¾" | 96.60 | 7.23 | 7.69 |
| 1⅞" | 89.99 | 6.61 | 7.14 |
| 2 " | 84.36 | 5.63 | 6.66 |
| 2⅛" | 79.40 | 4.96 | 6.25 |
| 2¼" | 74.99 | 4.41 | 5.88 |
| 2⅜" | 71.04 | 3.95 | 5.55 |
| 2½" | 67.49 | 3.55 | 5.26 |
| 2⅝" | 64.28 | 3.21 | 5.00 |
| 2¾" | 61.35 | 2.93 | 4.76 |
| 2⅞" | 58.69 | 2.66 | 4.54 |
| 3 " | 56.24 | 2.45 | 4.34 |
| 3⅛" | 53.99 | 2.25 | 4.16 |
| 3¼" | 51.91 | 2.08 | 4.00 |
| 3⅜" | 49.99 | 1.92 | 3.84 |
| 3½" | 48.21 | 1.78 | 3.70 |
| 3⅝" | 46.54 | 1.67 | 3.57 |

If the cones were built with a straight taper the difference in revolutions would be equal from one change to another, but the percentage of increase would be the same as shown.

You will notice in Table I that the increase from 1⅜ inches to 1½ inches diameter is 9.09 per cent, while the percentage of increase from 3½ inches to 3⅝ inches diameter is only 3.57 per cent.

From this you will see that ⅛ inch added to 1⅜ inches will make that diameter 9.09 per cent larger, while ⅛ inch added to 3½ inches will only make the new diameter 3.57 per cent larger, thus the smaller diameter increases nearly two and one half times as fast, 2.52 to be exact. With these facts before us we can now begin to lay out the cones.

We will assume a pair of cones, the sum of any two opposite diameters of which shall be a constant sum. Any sum may be chosen, being limited only by the design of the machine and the amount of room at our disposal. We will take for an example 9 inches as the sum of the two diameters. We will divide this sum into two parts, as 6 inches and 3 inches, which

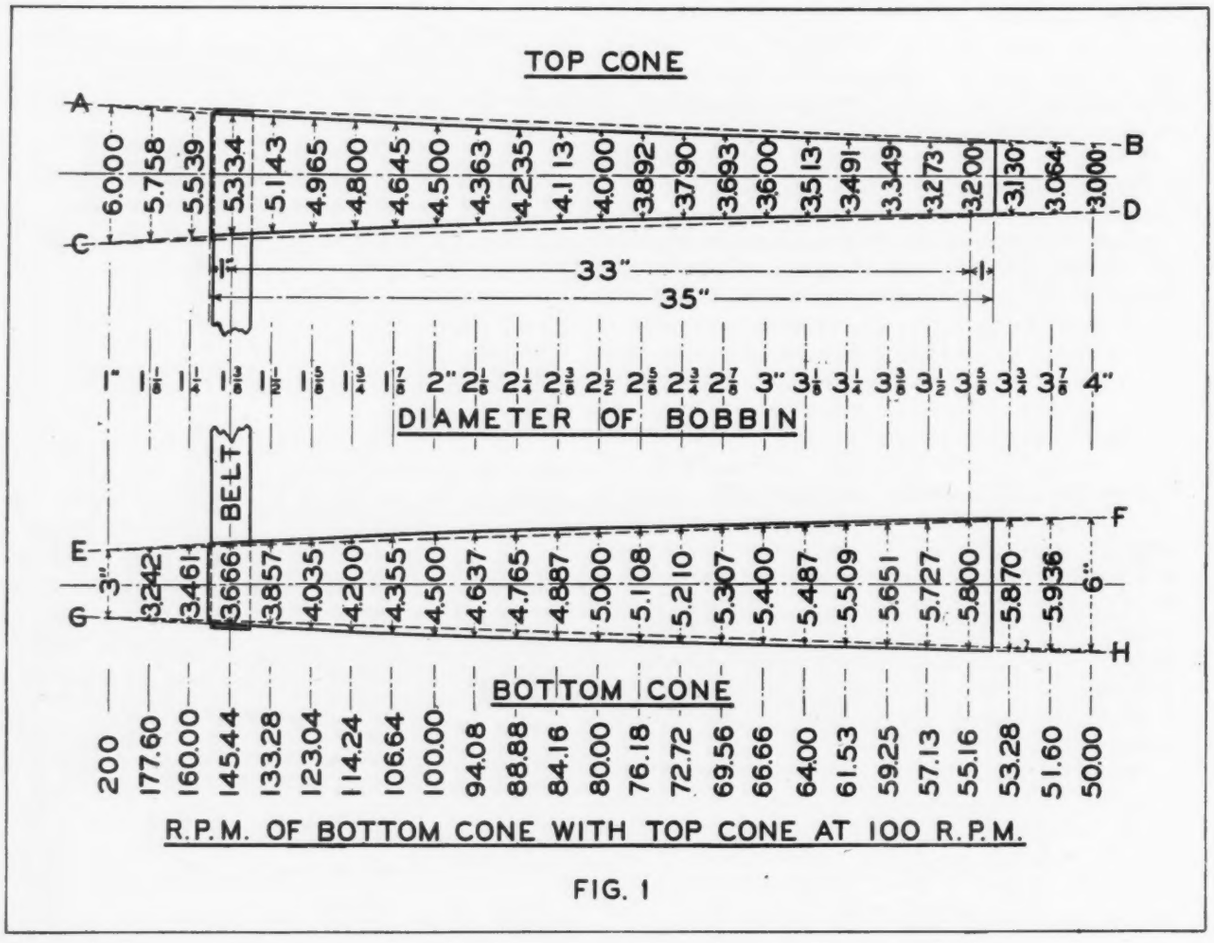
TOP CONE
A
B
C
D
6.000
5.758
5.539
5.334
5.143
4.965
4.800
4.645
4.500
4.363
4.235
4.113
4.000
3.892
3.790
3.693
3.600
3.513
3.491
3.349
3.273
3.200
3.130
3.064
3.000
33"
35"
1" 1 1/8 1 1/4 1 3/8 1 1/2 1 5/8 1 3/4 1 7/8 2" 2 1/8 2 1/4 2 3/8 2 1/2 2 5/8 2 3/4 2 7/8 3" 3 1/8 3 1/4 3 3/8 3 1/2 3 5/8 3 3/4 3 7/8 4"
DIAMETER OF BOBBIN
BELT
E
F
G
H
3"
3.242
3.461
3.666
3.857
4.035
4.200
4.355
4.500
4.637
4.765
4.887
5.000
5.108
5.210
5.307
5.400
5.487
5.509
5.651
5.727
5.800
5.870
5.936
6"
BOTTOM CONE
200
177.60
160.00
145.44
133.28
123.04
114.24
106.64
100.00
94.08
88.88
84.16
80.00
76.18
72.72
69.56
66.66
64.00
61.53
59.25
57.13
55.16
53.28
51.60
50.00
R.P.M. OF BOTTOM CONE WITH TOP CONE AT 100 R.P.M.

FIG. 1

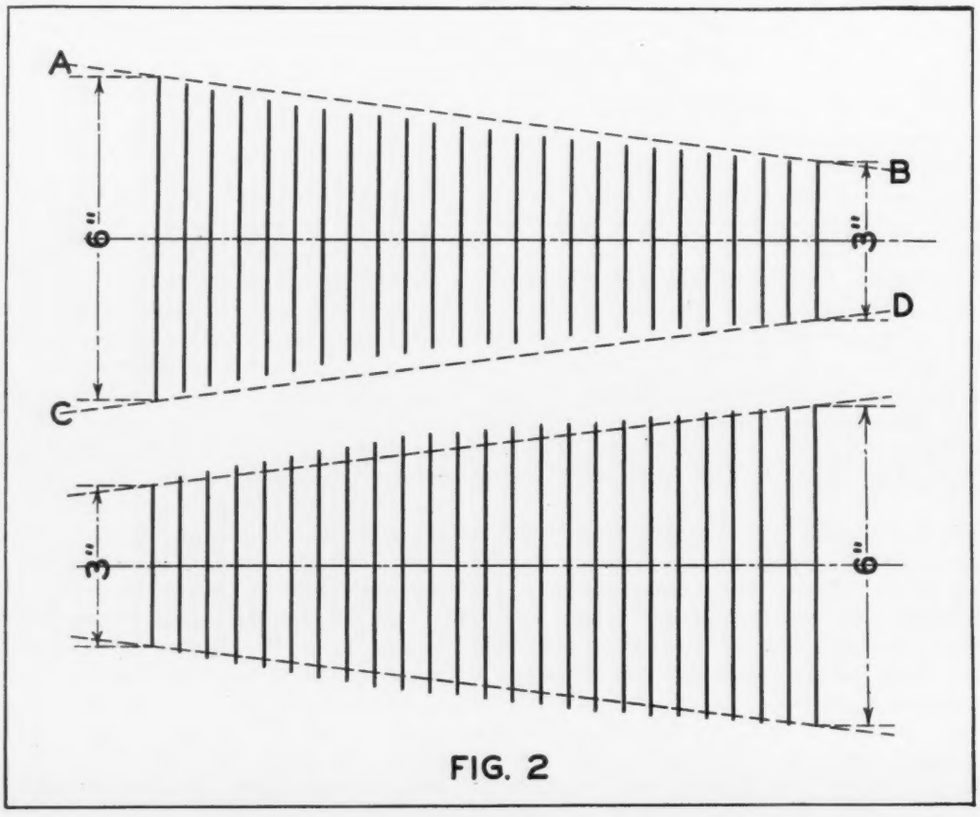
A
B
C
D
6"
3"
3"
6"

FIG. 2

gives a relation of 2 to 1, in other words one turn of the top cone will turn the bottom cone 2 times.

The speed of the top cone is constant, and we will call it 100 r.p.m. Thus the bottom cone will turn 200 r.p.m. With this relation (2 to 1), the empty bobbin must be 1 inch diameter and the calculations for the cones will start from here, i. e., 6-inches diameter top cone, 3-inch diameter bottom cone and 1-inch diameter empty bobbin. But the empty bobbin that is used in our example and also in practice on a 7 x 3½ frame is 1⅜-inch diameter, hence the calculations from 1 inch to 1⅜ inches can be ignored:

Using a cone belt 1¾ inches wide we will place the center of belt 1 inch from the end of cone, and under this center, we will place the calculated diameters of a top and bottom cone that are correct to drive a 1⅜-inch empty bobbin. Starting from this point we will finish at a point 1 inch from the other end and the space thus covered will include all the diameters necessary to fill the bobbin. We will assume the total length of the cone to be 35 inches, and our working length, 35 inches — 2 inches = 33 inches of the length of our cone—this length being divided into as many movements of the cone belt as there are layers of roving in the build of the bobbin. In our example we have called the diameter of the strand 1/16 inch and the bobbin increases ⅛ inch at each change of traverse. Thus we will have from 1⅜ inch to 3⅝ inches, 19 layers or 18 movements of the cone belt.

In order to obtain the diameters of top and bottom cone that will give the correct speed at each change of diameter of the bobbin, we have used a formula that can be found in any standard reference book on cotton spinning. The layout as described is for a *theoretically correct cone*, for a *practical working cone* the bottom cone must be modified and its outline changed to meet certain conditions that exist on all roving frames.

Figure 1 shows a pair of cones for a 1⅜-inch diameter empty bobbin to 3⅝-inch full bobbin.

Figure 2 shows more clearly why cones are made concave and convex. We have drawn vertical lines showing the diameters of the cones, top and bottom, at each ⅛-inch increase in diameter of the bobbin. These vertical lines we will call a series of pulleys. We have placed them closer together than in practice to better illustrate the concave and convex feature. You will notice straight dotted lines *A—B*, and *C—D* representing a straight tapered cone. Also the calculations are for a bobbin from 1 inch to 4 inches diameter inclusive. The revolutions of the top cone are constant but the revolutions of the bottom cone vary, and while the revolutions shown are not the same as the excess speed revolutions of the bobbins, it must be remembered that the bottom cone and the bobbins, are connected together with a train of gearing which delivers the proper speed in direct ratio for winding. If we were obliged to answer the question of why roving frame cones are concave and convex in one sentence, we would say, "because the ratio of increase on a small diameter is greater than it is on a large diameter, from one layer to another of equal thickness."

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## More Experiences as to Effect of Different Size Top Rolls on Yarn Number.

EDITOR COTTON:

I am writing to discuss the interesting question of "CONTRIBUTOR No. 6029", in the February issue of COTTON. This man pointed out that with the growing use of cork cots for covering top rolls, and with the practice of buffing them to a diameter smaller than the original, that there was a possibility that these different size top rolls would cause variation in yarn number. He reasoned that there would be less slippage between the surfaces of the large top roll and the steel roll than between the small top roll and the steel roll, because the larger top roll makes contact with the steel roll over a greater area when weight is applied, and because the larger top roll is more easily revolved by frictional contact on account of its greater radius, which means increased leverage.

When I first read the question, it was immediately clear in my mind that the small difference that would exist in the diameters of the top rolls would not make any appreciable difference in the yarn number; it would be so small that it would not be noticed, because, as you know, we can find a variation of from one to five numbers in regular work almost any time we might go to the trouble to weigh up a side or a frame.

Not being satisfied with this theory, however, I have been running a test, since reading this question, to see if what I have claimed to be true is so. Here is my test:

*A* represents a front roller (cork) 33/32-inch diameter.
*B* represents a middle roller (cork) 30/32-inch diameter.
*C* represents a back roller (cork) 30/32-inch diameter.
*D* represents a front roller (cork) 30/32-inch diameter.
*E* represents a middle roller (cork) 33/32-inch diameter.
*F* represents a back roller (cork) 33/32-inch diameter.

I ran *A*, *B*, and *C* together on a 5.58-hank roving, and produced: 39.84, 39.84, 42.02, 42.74—total 164.44, equals 41.11s number of yarn.

I took this same roving and made a test with *D*, *E*, and *F*, and got: 40.16, 40.16, 40.49, 41.84—total 162.65, equals 40.66s number of yarn.

This test was made on the same frame and same spindles.

Then I ran another test on 5.58-hank roving, but different bobbins. (This roving is double creel on spinning.)

On this test, *D*, *E*, and *F* together produced: 38.46, 39.68, 40.65, 41.32—total 160.11, equals 40.03s number of yarn.

Then I took these same bobbins and ran *A*, *B*, and *C* together and produced: 38.46, 39.53, 40.98, 40.65—total 159.62, equals 39.91s number of yarn.

The first test was made with the large roller in front and the small rollers in the middle and back; also with the small roller in front and large rollers in middle and back. All from the same hank roving, all on the same spinning frame, all on the same side and same spinning spindles.

The other test was made with the small roller in front and the large rollers in the middle and back; also with the large roller in front and the small rollers in the middle and back. This test was made from the same hank roving, but with different bobbins. It was made on the same frame, same side, and same spindles, but not the same as the other test. In other words, each frame ran a test with large roller in front and small roller in middle and back; and small roller in front and large rollers in middle and back, but from different roving bobbins.

You will notice in the first test, the large roller in front gave 41.11s, and in the second test, 39.91s.

The small roller in front, in the first test, gave 40.03s, and in the second test, 40.66s.

So we have an average for the large roller in front of 40.51s and an average for the small roller in front of 40.35s. There is only 16 points variation, which I think is very good. You will notice the greatest variation with the small roller in front is the difference between 38.46s and 41.84s, which is 3.38s, and the greatest difference with the large roller in front is the difference between 38.46s and 42.74s, or 4.28s.

This test was from two sets of roving, of 16 bobbins. You will notice a variation in each group of numbers from 33 points to 2.90 numbers.

Now, as to the theory of larger rolls having more surface than small rolls, and therefore less liability of slipping, we all understand the leather or cork rolls are driven by the steel roll, and we all understand the weight has something to do with the slipping. Now, if the rolls are weighted for a 33/32-inch diameter roll, and a 30/32-inch diameter roll is used, it stands to reason that the small roller is going to be held tighter than the large roll. Therefore, if there should be any slippage at all it would come with the larger roll. But there will not be enough for any material difference.

I will say this: if cork and sheepskin are run together, though they be of the same size, there will be a very noticeable difference in the yarn numbers. But the variation in either cork or leather when run separately would be so small that it would not be noticeable. As I said in the beginning, a random test at any time will show as great or greater regular variation in numbers as these tests I have given show.

CONTRIBUTOR No. 6037

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EDITOR COTTON:

I have read the interesting question projected by "CONTRIBUTOR No. 6029", who asked, "Will not different size top rolls cause variation in yarn numbers?" He explained that this question was prompted by the growing use of cork cots for covering top rolls on the spinning frame, and the practice of buffing them to a diameter smaller than the original diameter as they become creased and worn.

Since the top roll is revolved by frictional contact with the bottom roll, he said, it would seem that the surface speeds of the small and large diameter top rolls should be the same; but expressed the belief that there will be less slippage between the surfaces of the large top roll and the steel roll than between

the small top roll and the steel roll, because the larger top roll makes contact with the steel roll over a greater area when the weight is applied; and because the larger top roll is more easily revolved by frictional contact on account of its greater radius. In other words, the smaller diameter front top roll would make coarser yarn than a front top roll of larger diameter.

Sometime ago I put in a frame of oversize cork cots, also a frame of regular cork cots, and have been comparing the two with our regular leather covered rolls. The point of this inquiry had not occurred to me but one answer to this interesting question is contained in my record of daily sizings covering the period of one month. These sizings were made daily on ten bobbins from each kind of roll, all using the same roving and spinning 35s yarn.

The average size for the oversize cork cots was 34.78s.

The average size for the regular cork cots was 35.06s.

The average size for the leather cots was 34.98s.

The differences in sizes shown here are too small to be of any concern and they are just the reverse of what your inquirer expected.

In going over the sizes from day to day I find the oversize cork cots give the lightest size of the three about one third of the time although the month's average is slightly coarser.

From this experience I would judge that if there is any difference in the sizings from oversize cots and regular size cots it is too small to be of any great concern. The average variations found in roving will more than offset it.

L. W. N. (N. C.)

## Backing Off the Doffer for Grinding.

Who is correct—"C. R. D." or "T. A. B."? Send us your opinion.

EDITOR COTTON:

I noticed in the June issue of COTTON the article of "T. A. B. (MASS.)" in which he comes back at me for my article on carding which appeared in the February issue. In regard to my article, he says, "Gosh! I don't get the idea of backing the doffer off to a full gauge when starting the card to grinding." He says the doffer comb will have to be backed off also. Of course it will. He states that would take up a great deal of the grinder's time, and that he does not see why a real grinder should have to do all this. Well, I have seen a few real grinders myself.

If "T. A. B." will examine his doffer and cylinder fillet he will find that none of them is too tight at the edges. With the high speed of the doffer during the grinding, this fillet is bound to fly out some. If our friend does not back off his doffer while he is grinding, someday he is going to have a doffer or cylinder fillet torn off by their coming in contact with each other. Then it will be, "gosh!"

Backing off the doffer and doffer comb should take but very little of the grinder's time if he is, as "T. A. B." says, a real grinder.

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As to which sharpens the wire, the traverse rolls or the card, I think both do the work, for both the doffer and the cylinder are running in opposite directions and both have their part to perform in sharpening the wire.

I would like to see the opinions of others published as to the advisability of backing off doffers when grinding. I believe most of us will find that we may save our companies money by adopting such procedure.

C. R. D. (N. C.)

## Maintaining Mill Motors and Other Electrical Equipment.

**This man advocates regular cleaning and inspecting. Let's have some more discussion on this important subject.**

EDITOR COTTON:

I have heard lots of discussion about the upkeep and cleaning of motors, and why some motors run so much longer than others. Some get dry and cracked and the insulation comes off, causing them to arc and burn out or shoot. When the insulation is dry and cracked and the starting of the motor causes the coils to expand and crack the coils more, it's a sure thing that they will arc or shoot.

The writer is not by any means an expert on motors, but I have noticed in different departments of the mill that the overseer doesn't know if the oiler is putting the oil in the bearings, where it belongs, or just squirting it on a stopped-up oil hole with the oil running off on the floor. The result of this latter condition is that if a motor has its given load and has to pull a bunch of dry and dragging bearings, then of course in time the windings of the motor will become dry and cracked, causing motor trouble.

Our plant is very careful about things of this kind, for good practice results in a saving in oil and motor expense. If a motor is kept clean and is re-insulated at set intervals, they will give much better service. We take each motor down every eight months and clean and re-insulate it, and the date of this work and the condition of the motor is kept on record. The motor is taken apart and cleaned with compressed air at about 75 to 80 pounds pressure. (If the winding is bad the air pressure will have to be less). The winding is then washed with gasoline, using a stiff-haired brush. When washed thoroughly they are cleaned again. This is sufficient unless the motor is oil-soaked; then it will have to be cleaned and dried out in an oven, but if motors are cleaned out every few months, they will not need the oven.

We use black air drying varnish No. 457 for re-insulating, putting this on with a one-quart paint gun. Put on in this way, this varnish will cover each coil and wire, it stays soft and flexible, and will not dry out or crack. It can be secured at any general electric store. We have some motors which were ready for the repair shop, but by careful cleaning and re-insulating with this varnish we have been running these motors for three years without any trouble.

Each week the motors are cleaned out with air, keeping the cotton and lint from collecting in them and doing damage.

We have several hundred ½-hp. and ¾-hp. motors, and I find it very hard for the oiler to put or keep the correct amount of oil in the bearings of these motors. The result is that I have had a little trouble with some of them getting oil-soaked and having to be pulled down. Some of these motors have two bolts to the head, and some have four bolts. On the motors with four bolts, the bottom bolt can be taken out and the oil will drip out instead of soaking into the windings of the motor. On most of the two-bolt motor heads, the oil will drip out. I have found that drilling a 3/16-inch hole in the head will take care of the oil, and it works very nicely and does no damage to the motor.

Every three months the switch boxes are inspected, the oil is put to the proper level, and each contact and connection tightened. All contact points must be good; sand-papering and a small file will do this. Each fuse box is also inspected, and all bad fuse clips replaced and ends of fuse sanded if needed. Each magnetic switch or relay box is inspected and kept in good shape.

I think anyone taking the proper care of electrical equipment will avoid unnecessary shut-downs and keep the production up.

I am a reader of COTTON and think it the best textile magazine published, but I would like to hear more from other readers as to how they manage their electrical equipment and motors.

CONTRIBUTOR No. 5098.

## Running Oiled Stock Through Combers.

**Some suggestions for comber changes when running cotton which has been sprayed with oil.**

EDITOR COTTON:

I have been reading the recent discussions of combers in the "HOW OTHER MEN MANAGE" department, and noticed that someone asked about experiences in running oiled cotton in combers. May I offer some pointers that may be of value to him?

It is a rather common thing to find half lap needles filled with waste. A good half lap should be built so that there is no space at all between the brass strips and the following needle bars or rows of needles, as the brushes are only set up to the brass strips. If there is any space between them the brush will have a tendency to fill these spaces up and cause what is known as flocky half laps.

I take it for granted that this man uses a good roller varnish on the leather rolls and that the half laps are okeh.

It takes a good quality brush that is stiff and can be run fast enough to remove the waste from the needles. The gear on the driving shaft of the comber which drives the brush shaft may be changed from a 22-tooth gear which is standard on Whitin D-2 combers, to a 45-tooth on aspirator combers, or 36-tooth on combers equipped with doffers. Fan pulleys may be changed to speed up the fan, giving more suction to rid the brushes of the sticky oiled cotton. The nipper knife should not be set closer than a 20 gauge on this class of cotton.

CONTRIBUTOR No. 6040.

## More About Card Grinding Speeds.

**Continuing an interesting discussion. This man doesn't believe in lower doffer speeds.**

EDITOR COTTON:

The discussion by "CONTRIBUTOR No. 5080" in the October issue of COTTON, "How About Your Card Grinding Speeds?" interested me very much. It is my opinion that the frequency of grinding and the efficiency of grinding have more effect on the quality of the work than does the speed of the doffer, providing the speed of the doffer is within a reasonable range.

The secret of good carding is keeping the cards properly ground and set. I am convinced that it is unnecessary to run as low as 6 r.p.m. on the doffer in order to produce good work. In the several hundred tests of different grades and staples of cotton which I have conducted during the past few years, I have consistently used from 10 to 11 r.p.m. on the doffer. The varieties tested ranged in staple from 7/8-inch to 1 5/8-inch, and were spun into yarns ranging from 10s to 120s, the weight of the sliver on the finer numbers being from 38 to 40 grains and that on the coarser numbers from 50 to 60 grains.

The frequency of grinding should be governed largely by the grade of the cotton being used. The card naturally will need more frequent grinding when using, say, Low Middling cotton than when using Strict Middling. Some of us have not as yet got away from the old idea that a card should be ground every 25 or 30 days. A card should be ground before it becomes dull regardless of whether it has been 15 days or 30 days since it was previously ground.

I have in mind the case of one of the largest mills in the Southeast which was having considerable trouble in carding 1 5/8-inch staple. Various changes were made with no improvement. More frequent grinding of the cards finally solved the difficulty.

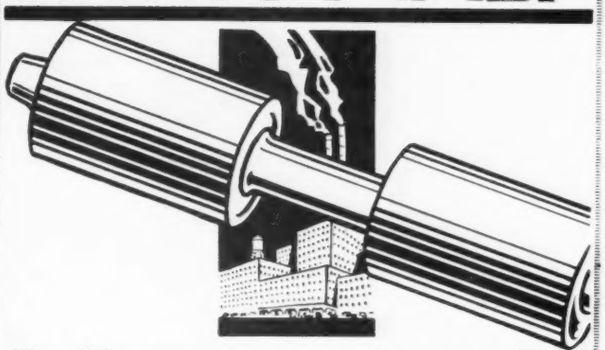
Your readers will recall that in his letter, which appeared on page 1167 of the October issue, "CONTRIBUTOR No. 5080" presented the grinding roll speeds which he had adopted following an investigation in a number of mills. I find that the new speeds used by him conform rather closely to the speeds which we have used for a number of years, and in the accompanying table, I am reproducing his speeds and also giving ours for comparison. Readers will find other mills' speeds on page 1167 of the October issue.

| | R.P.M. of Cylinder | R.P.M. of Grinding Roll | Traverses per Min. | R.P.M. of Doffer | R.P.M. of Grinder Roll | Traverses per Min. | R.P.M. Top Flat Grinder |
|---|---|---|---|---|---|---|---|
| Cont. No. 5080.... | 165 | 700 | 3 1/3 | 300 | 700 | 8 1/3 | 775 |
| Our Speeds ..... | 165 | 630 | 3 | 300 | 650 | 8 | 700 |

Of course, there will be differences of opinion as to the proper weight of sliver and r.p.m. of the doffer. However, using the above speeds on 1 5/8-inch cotton on ring spun yarns, we obtained from 20 to 21 pounds per skein on 100s yarn; on 15/16-inch to 1-inch cotton of good character, we obtained from 80 to 95 pounds per skein on 22s warp yarn, depending upon the variety of cotton used.

"CONTRIBUTOR No. 5080" states that he is looking for the next place that needs attention. I would sug-


SPINNA CALF



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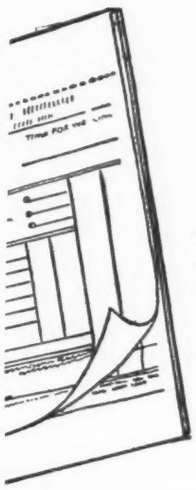

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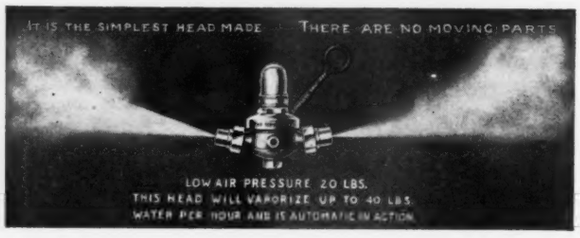
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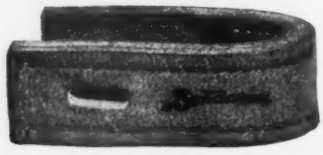

gest that he and other readers investigate their system of card grinding both as to whether the card is being properly ground and as to whether grinding is repeated before the card becomes dull.

CONTRIBUTOR No. 6009.

## More Answers on Carding Questions.

EDITOR COTTON:

On page 75 of the January issue of COTTON there is an article, "Answers to Card Room Questions", by "E. F. E. (GA.)". There are some of his answers that are not quite clear to me. First, in answering Question No. 2, "How is the production constant of a card found?", this man uses the correct method, but I do not see where he gets the 27.5-inch diameter doffer. All the doffers I have worked with are 24, 25, 26, and 27-inch diameter without clothing. As the clothing is ⅜-inch, this will add ¾-inch to the diameter of the doffer and must be used in figuring production.

In listing the elements required for finding a card production constant, "E. F. E." gives the following equation:

$$\frac{27.5 \text{ (doffer dia.)} \times 3.1416 \times 600 \text{ (mins. in 10 hrs.)}}{36 \text{ (inches in 1 yard)} \times \times 1.13 \text{ (draft between calender rolls)}} \quad 7000 \text{ (grains in 1 lb.)}$$

As an answer he gets .2096 as a production constant. Figuring his equation shows this to be wrong. His mistake, I think, was that in setting down his equation, he omitted to include 90 per cent running time allowance, and the insertion of this in the dividend of his equation where it belongs would give about the answer he lists, .2096, so I think it was a slip of the pen on his part.

The inquirer whom he was answering next asked, "How is the production constant found on a fly frame?" The answer of "E. F. E." was: "It is not possible to work out a production constant that would be applicable under any and all conditions and that would be of much service, as all the quantities in the production calculation are variable to a large extent."

I do not quite agree with this, because a production constant can be worked out for one hour as follows:

$$\frac{\text{R.P.M. roll} \times \text{dia. roll} \times 3.1416 \times 60}{36 \times 840 \times 1 \text{ hank}} = .0062 \text{ production constant for one hour.}$$

This multiplied by the r.p.m. × diameter of roll × actual hours run, and divided by the hank roving, equals the pounds per spindle. This constant multiplied by the hours run would be 100 per cent production constant and could be used on all frames.

The inquirer also asked, "Why isn't it possible to use a 10-inch tube gear for a 12-inch can?" "E. F. E." said, "It is possible if the turn tables will allow a 12-inch can to set correctly on them and rotate as it should, but it would leave a space of about two inches all around the can, and consequently would not fill the can to its full capacity."

This answer is correct as far as it goes, but it

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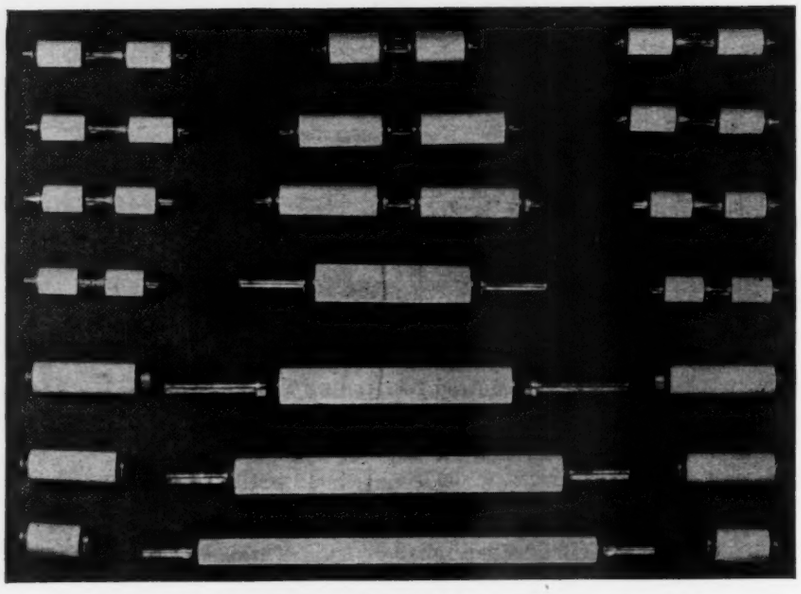

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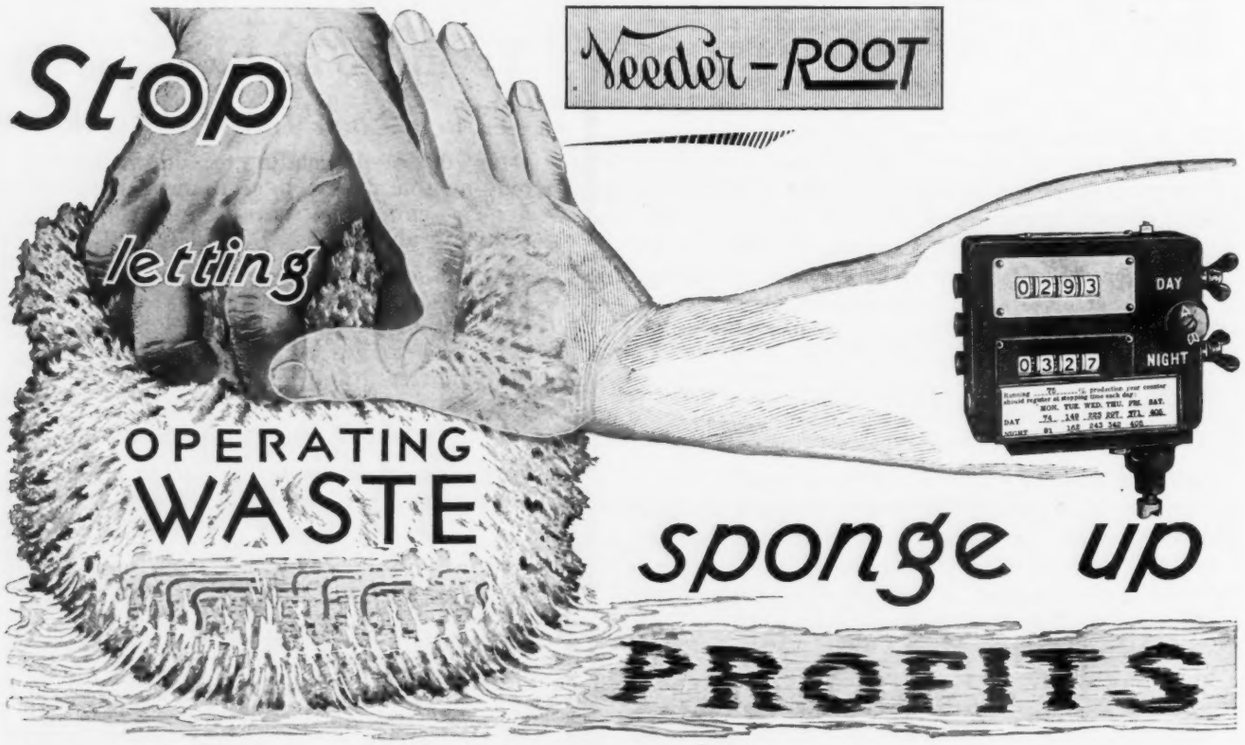


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does not tell of the trouble this condition would cause at the next process. The sliver would continually break due to the falling over of the sliver, binding the end that should be leading. I have found this out by practical test.

"How does the changing of the stripping plate of a card regulate the strippings?", was the next question. Here is a part of "E. F. E.'s" answer: "If this plate is set away it leaves the fibers in a more open and fluffy condition, so the fillet on the doffer cannot remove them as readily as if the fibers were in a more compact condition as is the case when the stripper plate is set close."

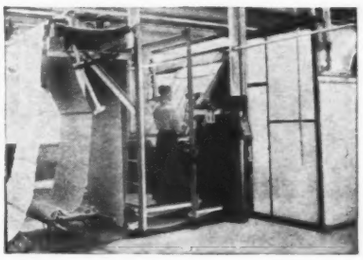
I do not fully agree with this answer, because, due to the high centrifugal force of the cylinder, any fibers held by it have a tendency to fly away, and as the doffer is set close to the cylinder and has more points per square foot these fibers would have more chance to be caught by these teeth than if close to the cylinder. With the stripping plate set away this condition holds. I believe the regulation of the flat strips is governed by another cause as follows: As I have stated, an air current is created by the centrifugal action of the cylinder, and this air must be taken in at some opening. We know on most cards the base of the card frame is made as air-tight as possible, either by level floors or by using beading around the base. Another place where some air may enter is around the sides of the card, but this space is not the only one. The space between the stripping plate and the flats is very important. When the plate is set away from the cylinder, it is nearer the flats and less air can be admitted here. This keeps the fibers close to the flats and the result is more flat waste. By setting the plate close to the cylinder we have a larger opening between the plate and flats and this allows more air to enter; this air drives the fibers close to the cylinder and we have less strips.

The ninth question was, "Is there a possibility of a coiler making a different weight of card sliver from another coiler with the same draft gear and the same weight of lap on each card? Why?"

In reading "E. F. E.'s" comments, I cannot find that the question has been answered. He said: "Incessantly there is a slight variation in the weight of yards in a lap. The perfection of such a bulky machine as a picker to make perfectly even weighted laps is an impossibility, though such laps are approached to a very high degree. However, this slight variation will also give us a slight variation in our card slivers. Then, too, the setting points of a card can materially change the weight of sliver due to the mote knives taking out more fly on some leaders than on others, and the stripping plate being set to take out more strips than others."

What he has said is correct, showing that due to the variation in picker laps there is a different weight card sliver from each card, and these will vary all through the lap, but the coiler does not affect the weight per yard delivered providing all cards have the same gearing and the same diameter of rolls.

CARDER (MASS.)

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This improved Pin Tenter, with insulated enclosure, is a great saver of steam and power and requires less floor space than old, inefficient tenters. Automatic selvage guide and width adjustment can be furnished with the new models. Housings, with fans, are also supplied for other makes of Tenters.

Other 'Hurricane' Equipment includes—

Automatic Loop Dryers—Vacuum Extractors—
Carpet and Rug Dryers—Stock Dryers—
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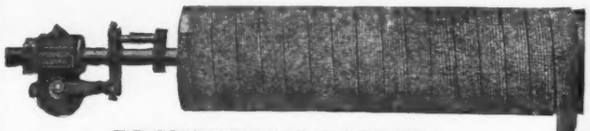
THE PHILADELPHIA DRYING MACHINERY CO.
3351 Stokley Street, Philadelphia, Pa.
DRYERS for ALL Textiles from Raw Stock to Finished Fabrics



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EMERY FILLETING
"The New Flexible" "Needs no 'Damping'"

Stocks in Boston, Mass., and the South

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The Standard Card-Grinding Medium

GUARANTEED "A" QUALITY
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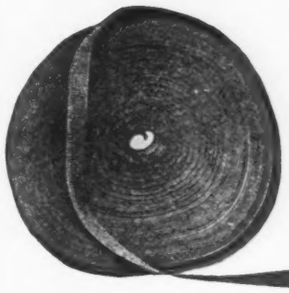

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Gastonia Brushes are specially designed for textile service. They have every modern feature worthwhile—at a cost so reasonable that no textile mill can afford to keep on using inadequate brushes. Write.

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Save time and money by having your card screens overhauled by specialists here in the South. We carry a complete line of parts for all makes of card screens, and guarantee satisfactory work and prompt service. Write for information.

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*Manufacturers and Rebuilders of Card Screens, Spinning Cylinders and Drying Cans.*

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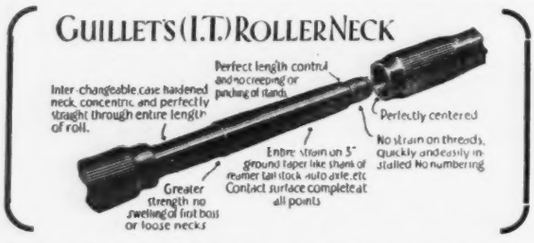
Inter-changeable case hardened neck, concentric and perfectly straight through entire length of roll.
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Contact surface complete at all points
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Only way to permanently overcome loose roller necks and stop that uneven yarn and excessive end breakage.

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Builders of Special Textile Machinery

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PRACTICAL MILL CONSULTANTS

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BARBER MANUFACTURING CO.

*Spinning Tape Specialists*

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## Comb Box Speeds.

This contributor advocates driving the comb box direct from the cylinder.

EDITOR COTTON:

Our fellow contributor, "CONTRIBUTOR No. 4943", presented a question for discussion and experiment in a past issue of COTTON dealing with comb box speed in relation to fast and slow carding that will warrant a bit of consideration.

It seems true that it is possible to operate the comb at a decidedly slower speed and yet produce the desired results under the slow method of carding that is being used and adopted very generally. The doffer running at a slower speed does give logical reason for the thought of decreasing the speed of the doffer comb.

In our mill, just as soon as our overseer of carding read the article of "CONTRIBUTOR No. 4943" he began experimenting along this line. With the co-operation of his assistant overseer and card grinders he has successfully worked out two methods of reducing the speed of the doffer comb and at the same time take the web from the doffer in a very even sheet.

The following gives two methods that we have successfully used to decrease the speed of the doffer comb:

We have Saco-Lowell cards, the standard cylinder speed being 165 r.p.m. There is an 18-inch pulley on the cylinder shaft that drives the licker-in and comb box by means of the binder pulley. By using a 3¼-inch pulley on the comb box shaft we obtained a speed of approximately 1800 r.p.m. for this pulley. We, however, reduced this speed to about 1100 r.p.m. by substituting a 5-inch pulley for the 3¼-inch pulley. The comb does just as efficient work, too.

We attained a still slower speed for the pulley on the comb box shaft by driving it direct from the cylinder pulley rather than from the binder pulley. We used the binder pulley for tension only. We reduced the speed of the comb box pulley to around 900 r.p.m. by this method.

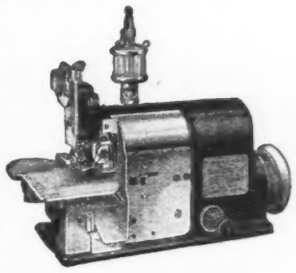
Our assistant overseer says that he can conservatively estimate a saving of 40 to 50 per cent on lubricants used, and that he has found the temperature of the comb boxes to range from 8 to 16 degrees lower where the slow speed is used.

Driving the comb box from the cylinder rather than from the binder pulley also saves considerable banding material.

The only drawback I have noticed to the slow speed has been the web not being quite as clear. The amount of fly falling on the doffer apron isn't as great where the slow speed is used, and this naturally means that less short material is being knocked out. I believe that on account of the short fibers staying in a decrease in breaking strength will eventually be noticed.

I do not think it advisable to reduce doffer speeds as much as some have reduced them. I know of some who have cut the speeds of doffers from 14 turns per minute to 5.5 turns per minute. This represents a decrease in speed of 61 per cent, which I think is entirely too much.

J. R. (GA.)

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HIGH SPEED TRIMMING AND OVERSEAMING OVEREDGING AND SHELL STITCH MACHINES

FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

—200 VARIETIES FOR 200 PURPOSES—

WRITE FOR DETAILS REGARDING

MERROW STYLES 60ABB AND 60D3B MACHINES

PRODUCING A FLAT BUTTED SEAM (AS ILLUSTRATED BELOW) TO FACILITATE SUBSEQUENT PROCESSING OF TEXTILES

FINISHERS REPORT DEFINITE SAVINGS BOTH IN LABOR AND FABRIC. LET US DEMONSTRATE WORK OF THESE MACHINES ON YOUR OWN PRODUCT.

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16 LAUREL STREET HARTFORD, CONN., U. S. A.

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METALLIC CARD CLOTHING AND SERRATED WIRES

Greater output, stronger thread and more regularity are just a few of the features that make Platt's Clothing pay for itself in such a short time

NO GRINDING
NO STRIPPING

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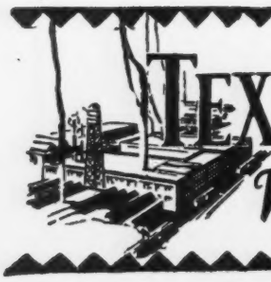


# TEXTILE BOOKLETS *Worth Writing For!*

*The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.*

**52. The Lincoln Twin Disc Floor Machine**—showing the many advantages of clean, sanitary floors, the saving of time and labor through using floor cleaning machines and describing in detail the various models of Lincoln floor machines. Lincoln-Schluster Floor Machinery Co., 213 W. Grand Ave., Chicago, Ill.

**54. Shipper's Handy Helper**—A forty-eight page booklet giving valuable information on shipping problems, including suggestions on packing, marking, numbering and invoicing shipments and describing the principal items generally used in shipping departments. Southern Shippers Supply Co., 118 Courtland St., S.E., Atlanta, Ga.

**55. Interpretation of Analysis for the Layman**—An eight page booklet explaining what the various terms used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

**56. Technical Service Data**—giving information on processes of textile manufacture in the use of oils, softeners, etc. National Oil Products Co., Harrison, N. J.

**57. Reducing Textile Costs and Troubles** telling all about the benefits of water treatment. Permutit Co., 440 Fourth Ave., New York, N. Y.

**61. Belt User's Book**—76-page book with suggestions, rules, tables and charts helpful in the purchasing, application, use and care of belting. J. E Rhoads and Son, 35 North 6th Street, Philadelphia, Pa.

**62. Rubber Products for the Textile Industry**—a 40-page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

**63. S-W Paint Standardization Plan**—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

**64. Efficiency and Performance of SKF Roller Bearing Spindles**—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., 40 East 34th St., New York, N. Y.

**65. Why Cooper Hewitt Light is Better Than Daylight**—a 16-page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

**66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176**, describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

**67. Specification and Size book, I-31**, convenient reference book giving complete information and prices on Rockwood Short-Center Drive for textile machines. Rockwood Manufacturing Company, Indianapolis, Indiana.

**68. Rockwood Pulley Specifications**, a reference booklet giving complete specifications of 2,540 stock sizes of pulleys. Rockwood Manufacturing Company, Indianapolis, Indiana.

**69. Monel Metal Equipment for the Textile Industry**—a 50-page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

**70. Fafnir Ball Bearings for One-Process Pickers**—outlining the advantages of ball bearings in guaranteeing smooth accurate motion particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

**71. Short Cuts to Power Transmission**—A 74-page handbook for belt users, incorporating the most important phases of practical belting practices, including considerations in belt buying, care of belts, making belt joints, belt calculations, causes of belt troubles, etc. Flexible Steel Lacing Company, 4619 Lexington Street, Chicago, Ill.

**72. The Merrow Butted Seam**—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

**73. New Reeves Catalog T-32**—A treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

**74. Colgate-Palmolive-Peet Bulletin No. T-22**—booklet giving complete details of degumming and dyeing in a single bath with soap. Colgate-Palmolive-Peet Co., 919 North Michigan Ave., Chicago, Illinois.

**75. The Facts About Armstrong's Seamless Cork Cots**—A helpful book containing plain facts, cost studies based on actual mill records, expert analysis, complete details on the advantages of Armstrong's Seamless Cork Cots. Armstrong Cork Company, 923 Arch Street, Lancaster, Pa.

**76. Jointite Cork Products**—Giving information on the uses of cork for insulation purposes, including useful data, specifications, tables, and charts for roof insulation, refrigeration, sound-proofing, heat prevention, heat conservation, vibration deadening, and condensation prevention. It contains concise and valuable data on all of these subjects, as well as photographs and drawings showing specific examples of various types of construction, test curves, etc. Copy sent free to anyone interested in any of these subjects. Mundet Cork Corp., 450 Seventh Ave., New York, N. Y.

**77. Bulletin T 200**—illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

**78. Booklet L 1289 A, Loom Motors and Control**—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

**1. Cotton Picking, Carding and Spinning**—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling By Whitin Machine Works, Whitinsville, Mass.

**2. Pepperell Equipment**—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

**4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor**—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

**8. "Textile Brushes"**—10 page booklet illustrating brushes for cleaning every part of mill. By Gastonia Brush Co., Gastonia, N. C.

**10. Leathers, Textile**—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

**11. Whitinsville Rings**—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

**15. The Powers System of Thermostatic Control**—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2789 Greenview Ave., Chicago, Ill.

**18. Popular Industrial Chemistry**—162-page handbook for dyers, chemists, finishers, purchasing agents. By Kali Manufacturing Company, 1404 No. Front St., Philadelphia, Pa.

**20. Bleaching, Dyeing, Finishing and Printing Textile Goods**—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

**21. Warp Sizing and Composition of Cotton**—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co, 748 Rice St., Atlanta, Ga.

**22. Tragasol and Its Uses**—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

**23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum**—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

**25**—"Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

**28. Akron Belting.**—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

**29. Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

**30. Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

**38. Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

**41. Budget Control**—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits. By Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.)

**42. Textiles and the Telephone Typewriter**—6 page booklet on telephone typewriter service for communication between mills and selling houses. By American Tel and Tel. Co., Long Lines Department, Atlanta, Ga.

**44. Points of Interest in and Around Atlanta**—86 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

**45. Fidelity Universal Ribbers**—A forty-eight page booklet showing the advantages and many styles of ribbed fabric and describing in detail and illustrating the latest developments in ribbers. Sent free on request by Fidelity Machine Co., 3908 Frankford Ave., Philadelphia, Pa.

# KNITTING SECTION

*Photograph actual size of plain and tuck stitches where they are joined.*

SWISS RIB

20 CUT

More "spring" . . . more "cling" . . . and gossamer lightness, in this new ribbed-and-tuck-stitch fabric, on the Scott & Williams automatic Swiss rib 20 cut machine.

20 cut...it's the finest rib that's been seen yet, for exquisite underwear.

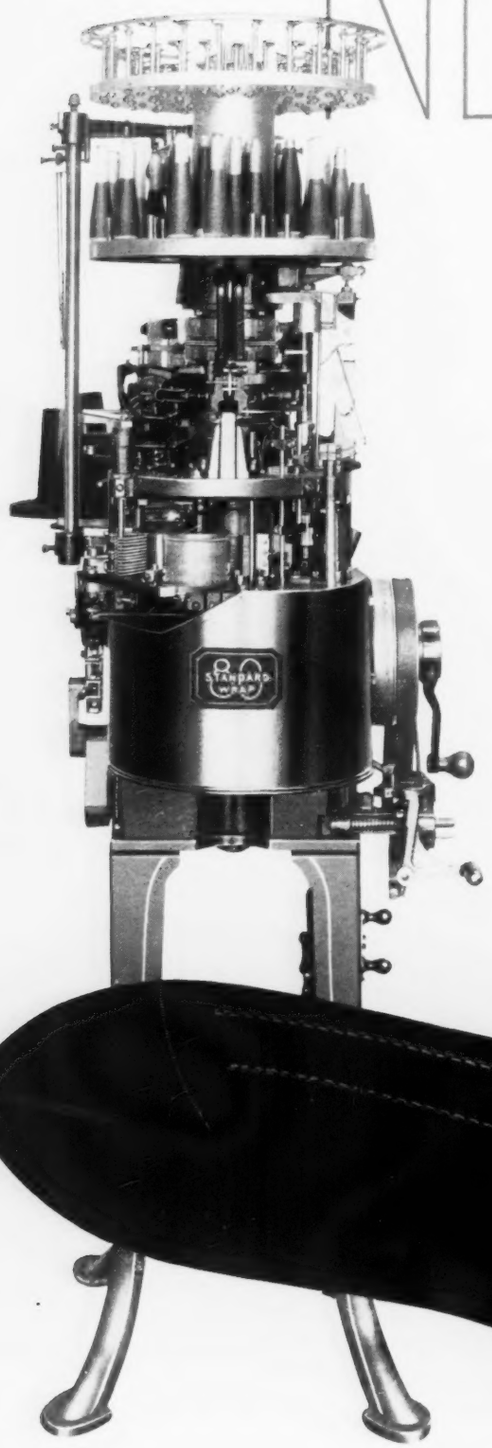
*Established 1865*

**SCOTT & WILLIAMS**

*Incorporated*

366 BROADWAY, NEW YORK, N. Y.

# NEW PATTERNS COLORS !




*THE STANDARD 80 WRAP MACHINE*

80 wrap bobbins make possible 80 different colors ... different colors on each adjacent needle in groups.

This new revolving cylinder machine, of the individual needle wrap type, has a 25 step pattern mechanism with trick wheel control. Any type of wrap yarn can be used.

The Standard 80 wrap turns out hose with high splice, double sole, plaited body and the exclusive "Gussetoe".

STANDARD TRUMP

*Established 1872*

**STANDARD-TRUMP**

**BROTHERS MACHINE COMPANY, INC.**

366 BROADWAY, NEW YORK, N. Y.

# Knitting Week at Philadelphia Profitable

## Constructive Meeting and Valuable Exhibition; Earl Constantine Makes Debut as Managing Director; Conference on Silk Defects is Conducted

THE 28th annual convention of the National Association of Hosiery and Underwear Manufacturers was held in the Commercial Museum at Philadelphia, on Thursday, April 14th, during the Knitting Arts Exhibition which was conducted from April 11th to 15th, under the Association's auspices.

There was a morning session of the knitters, followed by a banquet at 1:00 o'clock, and in the afternoon a special conference as to two-tone and other current difficulties in raw silk was held, with an excellent paper being presented by D. E. Douty, general manager of the U. S. Testing Company, which was followed by a general discussion.

### Address of President Meyer.

William Meyer, president of the Apex Hosiery Mills, Philadelphia, who is president of the Association, was unable to attend due to illness, and in his absence and that of George F. Dickson, first vice-president, Second Vice-President Rupert C. Aycock, of South Pittsburgh, Tenn., presided. Mr. Meyer's address was read, in his absence, by John H. Brine, of Rollins Hosiery Mills, Des Moines, Iowa, a director of the organization.

William Meyer, Who Was Re-Elected as President . .

Mr. Meyer's address, which was the first feature of the program at the Thursday morning session, was a complete and forceful presentation of the association's activities during the past year, as well as a frank statement of the needs of the hosiery and underwear industries today. It follows in part:

"A year ago our Association lost the valuable services of John Nash McCullaugh as managing director. The remarkable growth of the association during the previous years was to a great degree the result of his energy and ability. He left us to accept a highly responsible position within our industry. The value of his past experience has continued to be available to us as he was elected by you to the Board of Directors and we have had the benefit of his advice.

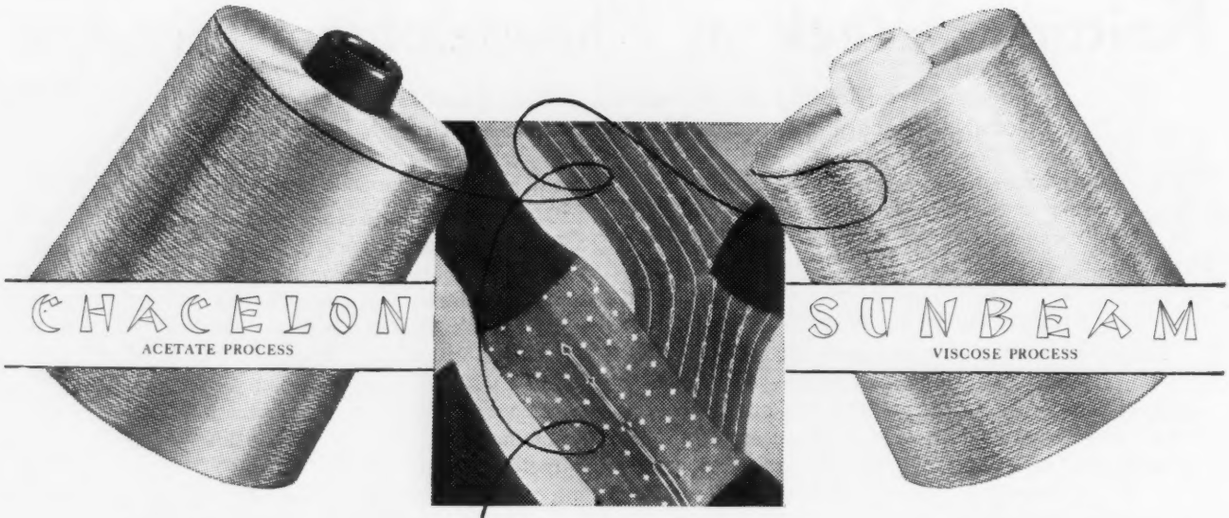
"The problem of securing a successor to Mr. McCullaugh was a delicate and difficult one. Your Board of Directors felt that all possibilities should be exhausted in order to assure the best selection possible. A special committee headed by Mr. Garnett Andrews worked on the problem continuously for about nine months, at the end of which time they unanimously recommended that the position of managing director be tendered to Earl Constantine. This recommendation was unanimously adopted by your board of directors three months ago and Mr. Constantine assumed his duties immediately.

"Mr. Constantine has come to us with an extended background of experience in Association work together with a successful experience in private business. He is well fitted to undertake the difficult task for which he has been selected and we have every faith that he will discharge his responsibilities with distinction and with satisfaction to ourselves.

"From what has just been said, it will be seen that the management of your association was of tentative character during most of the past year, and it will be understood that under such conditions it has been difficult and inadvisable to undertake many activities which otherwise would doubtless have been entered into. This does not mean that the functioning of the organization relaxed in any way nor that its services to the members fell short of the high standard which has so long existed and which is today expected of it. Between the time that Mr. McCullaugh resigned and Mr. Constantine came with us, the affairs of the Association were very ably managed by L. R. Keeffe, who has long been in our service and who is known and valued by all of us.

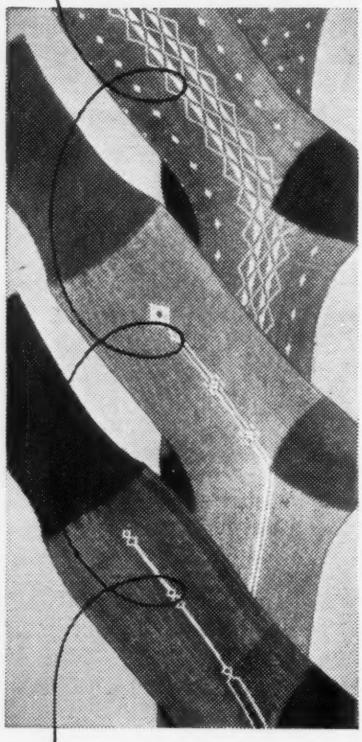
"The past year has been the most disturbed and difficult in the history of our two industries. While volume of production has been substantially equal to that of the year 1930, the market for our products has been seriously disorganized and price levels have fallen to a point where little if any profit has been realized by our manufacturers generally. In the economic conditions which prevailed prior to 1930, the consumer was concerned more with the quality and style of the goods and less with the price. Within the past two years the consumer, while still concerned with quality, can afford to pay much less and so exerts a pressure toward lower price levels. This pressure translates itself in the keenest competition among buyer to purchase the goods they require at the lowest price possible. Out of such a condition there results a 'buyers market'.

"Another factor in the price situation has to do with conditions in individual companies which have induced them to meet lower and lower competitive prices to the present dangerous point. In some cases a management considers a maintenance of its experienced personnel important enough to justify undue sacrifices in profit. In other cases, the necessity to meet loan obligations in part or in whole has led to the same result. Finally, it would appear that too many manufacturers estimate their costs inaccurately and




# "They make better socks"

Bluntly and briefly, that sums up the story of Chacelon and Sunbeam, our acetate and viscose yarns. They work together for results like a team of well mated horses. The growing preference for these two yarns is often due to their superior performance in plating. They are producing sharper, clearer patterns—the kind that sell half hose today. Sunbeam (viscose) plates over Chacelon (acetate) perfectly. This prevents even the slightest blurring of designs.



Used together, these yarns assure measurably less misplating. They help avoid expensive delays, too. They save time, not only when machines are being tuned in, but after the run starts. They permit even, unvarying tension. They are conditioned and wound to meet the needs of the half hose mill. Chacelon and Sunbeam can provide every economy to be expected from the use of an ideal pair of half hose knitting yarns.

*It's in the yarn*

## TUBIZE-CHATILLON CORPORATION

2 PARK AVENUE · NEW YORK

**MAKERS OF VISCOSE, NITROCELLULOSE AND ACETATE YARNS**

Tubize
BRAND
REG. U.S. PAT. OFF.

believe that they are selling at a profit, whereas it would appear that the reverse is true.

"Throughout the past year your association has steadily exerted all its moral force and logical argument in the direction of:—

Proper and accurate cost accounting.

Selling for profit only.

Manufacturing against orders only.

Reduction of stocks on hand.

"The first two efforts are inter-related, even as the latter two have a direct bearing on each other. Obviously we cannot quote prices which allow us a margin of profit, if we are not accurately informed on the full cost of our product. Likewise, stocks on hand will not decrease if we do not manufacture only against orders. I believe that we have secured tangible results in our campaign for manufacturing against orders and for a reduction in stocks on hand. Stocks on hand at the end of 1931 are generally about 10 per cent lower than the year previous. On the other hand, it appears to me that there is much progress to be made along the line of careful and complete cost accounting, and until we have made this progress generally, we shall suffer from profitless prices, and these will have a tendency to hold the level dangerously low.

"Even at the risk of repetition, I urge upon our industries the growing necessity for the application of proper cost accounting methods. The association in recent years has placed in the hands of our members practical methods and information. The material, therefore, is available and what is needed is an increasing and general application of it—to-day and tomorrow more than ever before.

"Our two industries enjoyed unusual expansion between the years 1922 and 1929. The result of this was a sharp increase in their productive capacity. It would be surprising if, under such conditions, many men were not induced to enter the industry without sufficient experience, or lacking sufficient working capital. The longer the curve line of business fails to rise, the more embarrassment will knock at the doors of members, with resulting re-organizations and sometimes mortalities. This is no different than what is happening in other industries. One of the results has been the throwing on to the market of much equipment at prices which have little relation to its value. Such equipment, if put into production, becomes a form of unfair competition against the manufacturer who has purchased his equipment through the ordinary channels and under ordinary conditions.

"To-day more than ever, a prudent manufacturer gives attention to credits. The wheel of fortune is constantly turning and credit standings are shifting. The time to ascertain the credit of the customer is before the contract is signed. Established jobbers and retailers of good character and record deserve all proper consideration, but those whose records are inadequate or not clear, should be dealt with only after securing the necessary facts. The demands on the credit department of the association have grown under the prevailing conditions, and credit again must be given to A. F. Mitchell, whose judgment and service have been so valuable to us.

"The association has continued its co-operation with the Bureau of Standards in the matter of standardization of lengths and measurement. Such work is always difficult and encounters a variety of differences of opinion. Our manufacturers, however, have realized the value of reasonable standardization and the results achieved so far testify to their willingness to yield their views sufficient to permit common agreement. Consideration is being given to standardization of the conditions of a sales contract. Uniformity on the basic conditions would contribute a distinct element of stability. Thought may be given to educating the consumer to the various qualities and characters of our product, thus inviting intelligent demand and buying.

"The foreign market has consumed so far only a negligible part of our products. The year just closed shows a sharp reduction in such exports and an increase in imports. The tariff wall contagion which has spread rapidly abroad during the last two years does not encourage an expansion of our markets in foreign industrial countries, but this does not apply to the markets to the south of us.

"Your association was the first trade organization to come out with a clear and defined policy on the recently proposed sales tax. Briefly, its policy was for the manufacturer not to absorb the tax and for such tax to be carried as a separate item on all invoices. This policy was based on the fact that a sales tax is essentially a tax on the ultimate buyer and that the proposal to collect it from the manufacturer only made him the collection agent of the government. The policy of the association was generally accepted in our industries and was followed by many other industries. Our industries are in no condition to take on any such additional tax at this time, and our frank declaration on the matter contributed toward making clear to our legislators that the tax would be paid by the consumer as it properly should be. The sales tax proposal has been defeated, but even before this, all items of clothing had been eliminated from its effect.

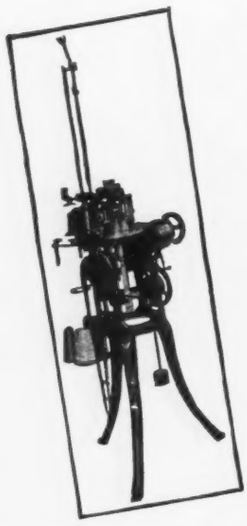
"Our managing director recently surveyed the views of our members as to the activities of the association, present and future. The response of the members has been very gratifying and much information has been secured which will be helpful in shaping our activities and methods.

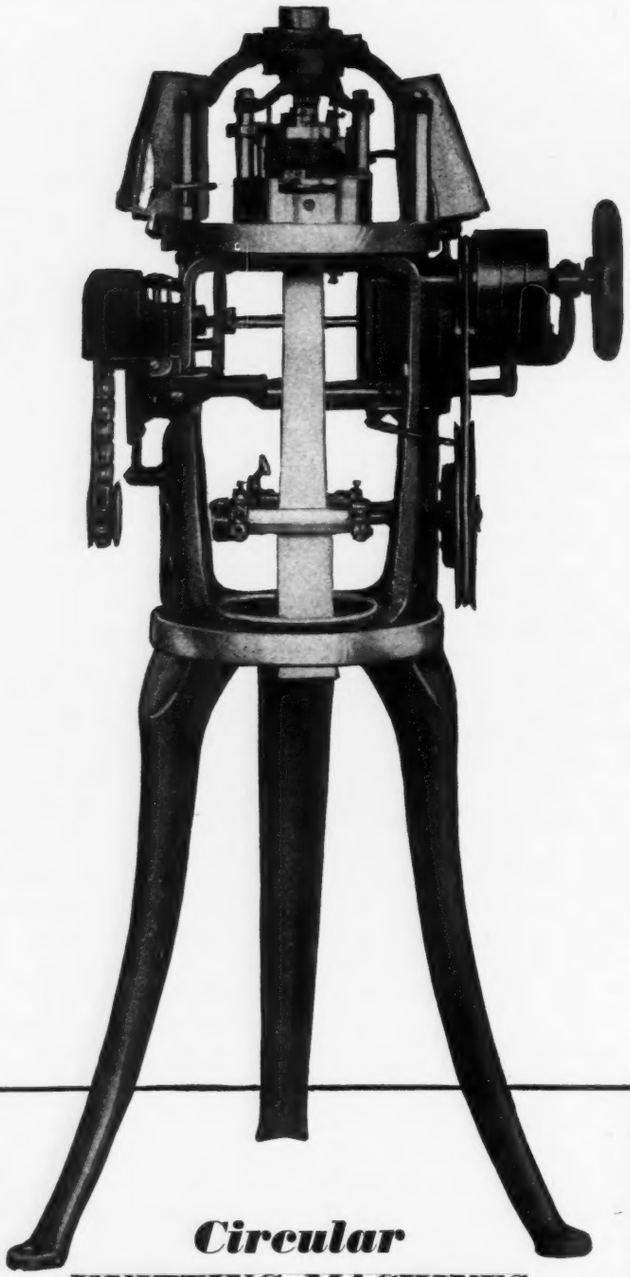
"The association maintains a technical research staff, headed by E. M. Schenke, who is well assisted by H. E. Shearer. We have a mutually satisfactory arrangement with the officials at the Bureau of Standards at Washington, by which our research staff enjoys the exceptional facilities of the bureau. It would be impossible to adequately state the value of this service as rendered, and I take this means of publicly recognizing our appreciation of the co-operation of the Bureau of Standards.

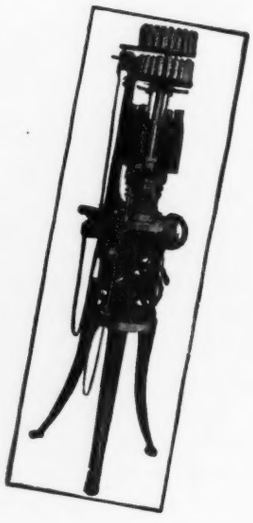
"Last year my distinguished predecessor, Mr. Mettler, stressed the need for the timely and regular interchange of those vital statistics which alone make it possible for management to properly gauge supply and demand and to, in that way, be governed both in production and in merchandising. The delay in the selection of our new management has postponed activities along this line, but serious study is now being given

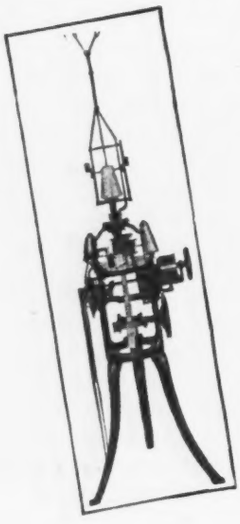
# ALL TRUE-RIB

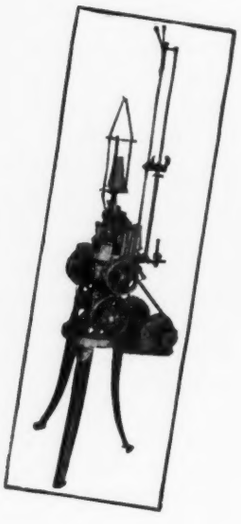
(Patented or patent pending)

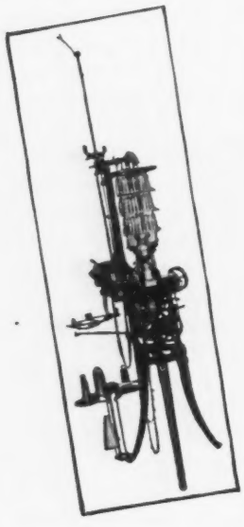


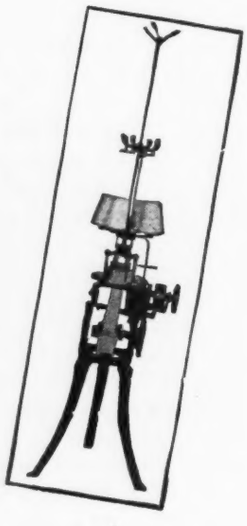












***Circular***

**KNITTING MACHINES**
**BRAIDING MACHINES**
**CREASING MACHINES**

**FIDELITY MACHINE CO.**
**3908-18 Frankford Avenue**
**PHILADELPHIA, PA.**

THE FIDELITY UNIVERSAL RIBBER

to the subject and as soon as possible something definite will be presented to our members for their consideration. We cannot hope to exercise broad judgment in our problems of production and merchandising if the only definite figures which guide us are those of our own plant.

"Of late, there has been considerable complaint in our industries on the quality of raw silk. This situation, no doubt, results in great part from the present low price of the commodity. It would appear that the producers are not going to the usual expense in sorting the silk, with the result that the finished product frequently shows 'two-tone' effects, and results in seconds.

"The Knitting Arts Exhibition, which is in progress here this week, has always been staged under the auspices of our Association. We have a very direct interest in it. The Exhibition is recognized as the finest of its kind held in this country. It gives the knitting industry an annual opportunity to inform itself visually and in a convenient way with the progress and changes made in equipment and in commodities which are of interest to it. The continuance of these exhibitions during years of unfavorable business not only testifies to the value of the exhibition, but likewise renders a tribute to the courage, foresight and broad vision of the exhibitors. These exhibitors are entitled to our special consideration.

Earl Constantine, Who Made Debut as Managaging Director . . .

"Our new managing director, Mr. Constantine, has been meeting our members in group conferences at various points. The reception which has been given him has been of the finest. The conferences have developed many facts which will guide us helpfully. Consideration is being given to a conference to be staged this Fall in New York, at which attendance shall be limited to principals of the companies which are active members of the association. Such conference will deliberate on a carefully selected agenda and it is believed that material benefits will be derived in the direction of correcting bad practices and creating a degree of stability. If our hopes are realized, such a conference will probably develop into an annual, if not a semi-annual, function. It is necessarily difficult to carefully deliberate at our annual meeting held at the time and in the premises of the Knitting Arts Exhibition.

"It is the height of wisdom for a man to refrain from discussing the likely turn of the road toward better business. One may point out, however, that the fundamentals essential to a better business have improved during recent months. Among these is the check which has been put on bank failures and which is an evidence of improved confidence; and the voluntary horizontal reduction in railway wages and other relief given our railroads, the sound condition of which is at all times necessary to business as a whole and whose purchasing power, when normal, has much to do with the general condition of business. I believe it safe to add that our industries will be among the first to show recuperation, as they supply necessities of life."

The report of Ernest Blood, of John Blood & Sons, Philadelphia, as treasurer of the association, showed that while a decrease in revenue had resulted from smaller income from the 1931 Knitting Arts Exhibition and some other causes, the policy of the organization's operations had resulted in its staying within its income, so that the financial affairs of the association are in good condition. The report of the resolutions committee, presented by C. S. Kincaid, of Magnet Mills, Inc., Clinton, Tenn., consisted of a resolution calling for more economy in government, which was unanimously adopted.

The concluding feature of the session was a frank and sensible talk by Earl Constantine, the new managing director, making his first appearance before the association as a whole. Mr. Constantine spoke informally, with "Making the Port in a Storm" as his subject. His survey of fundamental conditions in the hosiery and underwear industries, based upon the comparatively short association he has had with the field since his acceptance of the office of managing director in January, made a striking impression upon his hearers. His views as to the steps to be taken by the organization left his hearers with the confident feeling that the affairs of the organization will be handled with intelligent and constructive leadership under his direction.

Mr. Constantine emphasized the plans for holding thorough conferences, apart from the formal annual meetings, between manufacturers in the different groups of the industry —probably to take definite form first as a Fall Conference in New York under suitable surroundings.

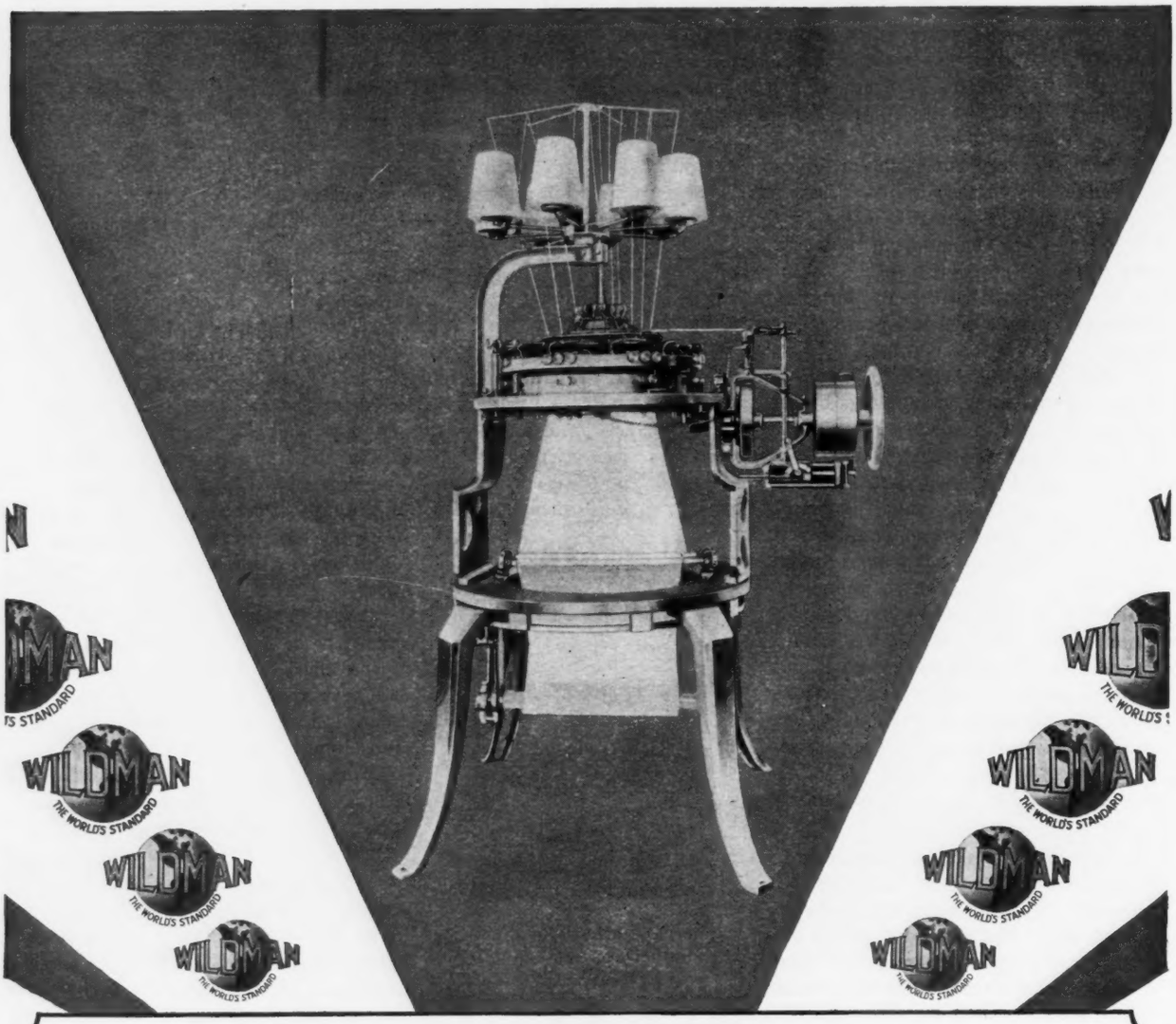
The report of the nominating committee, which was adopted unanimously, called for the re-election of all officers and directors.

At the luncheon, which is an annual affair largely attended by knitters, exhibitors at the show and guests, music was supplied by a Philadelphia orchestra, and the only speaker was Count Ernesto Russo, of Italy, who presented in a semi-humorous vein, his impressions of America and Americans.

### Conference on Silk Problems.

An interesting special session was held following the luncheon, to discuss the problems, causes and possible remedies of two-tone silk and other difficulties encountered by the users of raw silk. The session, which was unusually well attended, was featured by a comprehensive paper on two-tone and other silk defects, by D. E. Douty, general manager of the United States Testing Company, of New York City.

Mr. Douty clearly pointed out that two-tones, or stripes, have become the prevailing difficulty in raw silk. Confining his remarks to a semi-technical de-




Use Wildman Body Machine for the manufacture of *quality* Rayon.

WILDMAN MANUFACTURING CO.
Norristown, Pa.

WILDMAN
THE WORLD'S STANDARD

# WILDMAN
## SPRING NEEDLE BODY MACHINE

scription of the methods of silk culture employed in Japan, particularly in regard to reeling, Mr. Douty pointed to the original source of the problem as being in the form of organization in force in Japan with regard to the cultivation and production of the silk. As a result of small size and financial condition, the filatures in that country which supply the silk cannot accumulate the silk in even 10-bale lots, with the result that one sale might represent the production of a number of these rural filatures, resulting in unevenness, which also comes, he explained, from unavoidable changes in the size of raw silk during reeling.

Back in the days when the hosiery industry was using heavier weights of silk, the two-tone effect—resulting from a variation in the size of the thread or a difference in the dye-absorptive qualities—was not so noticeable as at present, when finer threads are being used for knitting the sheerer chiffons.

A thorough discussion followed Mr. Douty's paper. As a result, it was moved that a committee of members of the National Association of Hosiery and Underwear Manufacturers be appointed to make a study of the problems in the grading and marking of raw silk as affecting manufacturers of hosiery and underwear.

### The Knitting Arts Exhibition.

As usual, the Knitting Arts Exhibition, held during the week of April 11th, was the main center of attraction for visiting knitters. While somewhat smaller in size and scope than in recent years, nevertheless this year's show presented a valuable opportunity for learning of new developments and equipment. The excellent operation and arrangement of the show, which has now come to be taken for granted, showed that as usual Chester I. Campbell and his corps of assistants were functioning in their usual efficient manner.

No full-fashioned machinery was in operation, though all important manufacturers and representatives maintained reception space and provided accommodations for any visitors who might wish to inspect equipment by means of a short trip from the hall. Particular interest was displayed in discussions here of single-unit knitting, lace attachments, etc.

The booths of the several manufacturers of seamless or circular knit hosiery machines were as usual centers of attraction for most knitters of this type of equipment. In the booth of the Hemphill Co., of Pawtucket, R. I., seamless machines for every current type of hosiery, half-hose, golf-hose, ladies' and children's hose, were featured. Two Banner full automatic wrap stripe machines, with 18-color feeds and 14 steps, were shown, one knitting 240-needle pure silk ingrain hose on true wrap stripe and the other knitting wool half-hose. Both machines were equipped with triple color change in vertical design. There was also the new "mock-wrap" (float thread) machine, knitting wool half-hose; and an improved Banner split-foot machine knitting white-foot half-hose with step-toe and low-heel of the type which keeps the white yarn below the shoe line, knitting leg and instep from a single cone of yarn; and two rib machines, one the new Banner automatic true-rib half-hose machine with French welt and 12-step reverse plaiting, and the other a Spiers ribber knitting 6x3 plaited hose. In the golf-hose group were two Banner 12-step reverse plaiting machines, one the regular 12-step with double feed and the other using the 13-step mesh attachment in combination with 12-step reverse plaiting. Another machine was shown knitting on ladies' weltless (single-top) hosiery with 26 selection mesh leg, lace top, picot edge and small heel. Three machines on children's were shown; one knitting on 13-step mesh in combination with 12-step reverse plaiting and rib top; another on 2-inch 13-step mesh with rib top, and a third on infants' rib hose, size 4.

At the Standard Trump Brothers Machine Co. booth was an outlay of six Model H machines equipped with the latest attachments. Two were on men's half hose; two on infants'; and two on children's. There were also three Model L machines of the individual needle wrap type, stationary cylinder and revolving cam cylinder; and a new development in the form of an 80-wrap machine, designed to employ up to 80 wrap yarns in different colors; controlled by a 25-step trick wheel, and equipped for high splice and double sole.

Scott & Williams, Inc., featured a new H H 25-step spiral machine on infants' fancy socks in small diameter; the gusset toe Model K spiral machine for ladies' net and fancy lace hosiery; and the ES embroidered stitch machine in various gauges for the manufacture of distinctive wrap type half hose with gusset toe. In addition, the new Swiss rib circular underwear machine for producing fine stitch underwear was shown for the first time.

Fidelity Machine Co., Philadelphia, showed a ribber equipped with four color yarn selector and knot tyer; a multi-step bird eye mesh ribber equipped with 25-step patterning mechanism, picot edge, plaiting and four color yarn selector and knot tyer; a multi-design top machine; a ribber equipped with five color yarn selector and knot tyer and picot edge attachment; a ribber equipped with two-color yarn changer; a French welt ribber with plaiting attachment; a selvage welt ribber; a three feed high speed tubing ribber; a 16-carrier fish line braider; and a steam heated steam jet creasing machine.

To extend the description of the equipment, supplies and accessories exhibited would be to cover almost the complete list of equipment and services provided for the knitting mill, including machines, yarns, dyeing equipment, boarding machinery, metals, needles and sinkers, oils and dyestuffs, finishing machinery, winders and twisters, trade-marking, electrical and illuminating equipment, humidifying equipment, sewing machines, belting, boxes and labels, counters, drying forms, etc.

The attendance at this year's show was somewhat diminished, as was to be expected under the conditions, but a number of exhibitors reported that those mill men attending exhibited the keenest interest in the equipment and other products displayed and represented the more serious type of prospect; coming to the exhibition under present conditions indicated an interest of a more concrete nature than that of mere curiosity.

## Wants Method of Making Pattern for Spiral Machine.

EDITOR COTTON:

I would like to hear from "KNITTING KINKS" readers who have Scott & Williams Model K spiral float machines. What system or method do you use when laying out a new pattern on these machines? I would appreciate it if some reader would take a sample design for the hem, and explain what method is used in laying this design out on paper, and then how the jacks are cut. What steps must be taken to get a clear pattern on these machines?

CONTRIBUTOR NO. 6068.

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## Aids for Getting Better Looping.

**Some good practical suggestions. Let's have your ideas on other things that will help.**

EDITOR COTTON:

One of the many places in a seamless hosiery mill where money can be easily lost is in the looping department. The reasons for this are mainly that through carelessness, improper training, poor knitting, poor records and a dozen or more seemingly minor ailments, the looping department makes menders, seconds, thirds or waste out of goods which are supposed to be perfect when they leave the knitters. The looping department, however, cannot get results unless the goods have a good finger hold, a loose course (some mills call it looping line) large enough to be plainly seen, yet not so large that it will cause the trimmer knife to cut holes. Goods having the same kind and size of yarns in the toe should be knit uniformly as to tightness, also all uneven knitting in the toe should be avoided. In short, too much attention cannot be paid to knitting and careful handling in all operations after knitting to keep the goods fit to loop.

Now let's assume the goods come 100 per cent fit to loop to the looping department (they never do), what can this department do to help keep it perfect?

First of all, the goods should be looped on the proper machines, not trying to loop 24-point work on a 22-point machine, 26-point work on a 24-point machine, etc. Many mills do this, or should we say attempt to get away with it, and usually find losses caused in looping.

Certain machines or rows of machines should be set up to loop those styles where the toe yarns are alike. Ingrain, bleached, combed cotton or goods with mixed toe yarns, such as rayon and cotton twisted or rayon and silk twisted, should not be looped on the same machine. Besides slowing down the operator due to the mixture of goods it usually brings on various kinds of machine trouble.

The operator should be taught to inspect the work from her machine at regular intervals, at least several times in each dozen, so in case the machine gets out of adjustment it will be found quickly. It is especially important to watch for bad work when changing from one knitter's work to another's, or from one kind of work to another (if this is unavoidable) as the variation in the texture of the goods may make it necessary to slightly re-adjust the machine to avoid bad work.

The machines should be kept in first class condition by fixers who are thorough in their work. Good looping yarns made for that purpose should be used especially on fine gauge machines, such as 28- or 30-point, as they have less knots and will stand the strain better than ordinary knitting yarns and therefore will reduce needle and point breakage, make less seconds and not tear up the machines.

The machines should be run at the speeds recommended by the manufacturers and should be carefully cleaned and oiled daily. Lint is not uncommon in a looping department and additional dust from the outside, with a little moisture thrown in, does not help good looping one bit. A neat and useful cover for the entire machine can be made in the form of an envelope of some ordinary denim cloth at a slight cost.

◆ ◆

**WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.**

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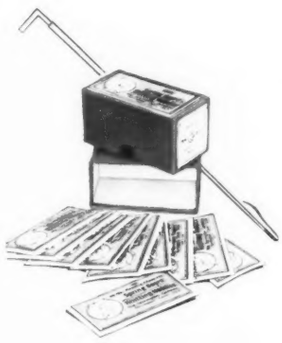
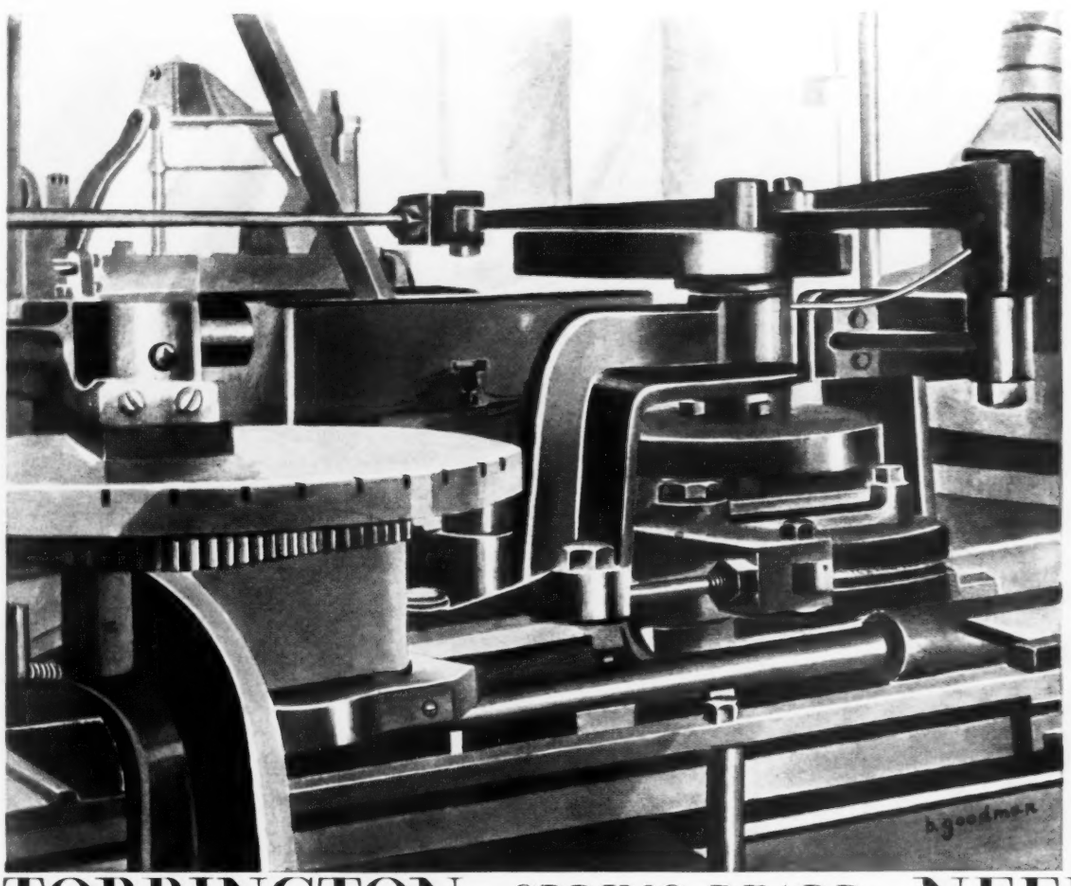


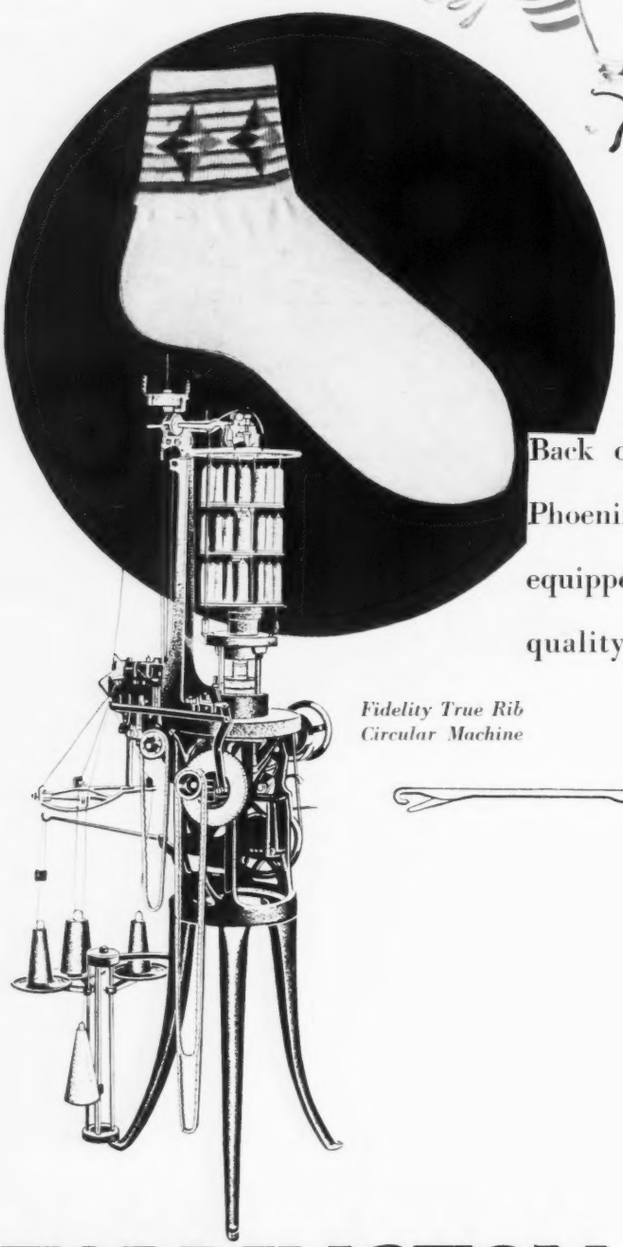
Perfection beyond any human skill . . . uniformity such as human eye could never gauge. Machines are the scientifically accurate workmen of today. That is why Torringtons are *machine made* needles. And that is why your production with Torringtons is dependably uniform.



# TORRINGTON *SPRING BEARD* NEEDLES

# "BY THE COMPANY THEY KEEP"

*Phoenix Hosiery*



*Fidelity True Rib Circular Machine*

Back of a good product are good "tools". This Phoenix hosiery was produced by Fidelity machines, equipped with Torrington needles. And of this quality association, all three are justly proud.

## *The Torrington Company*

*ESTABLISHED 1866*

*Torrington, Conn., U.S.A.*

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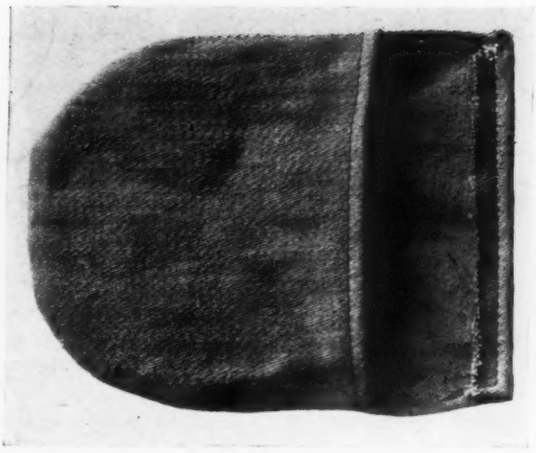
COVENTRY, ENGLAND • AACHEN, GERMANY

# TORRINGTON *Latch* NEEDLES



Model of denim or khaki cover for loopers.

It takes but a few minutes for each operator to clean her machine and cover it each night rather than put oily rags or tallow on the points, as many mills do. A good cover is especially useful over week-ends or where machines are idle several days at a time. In case of long periods of idleness some good point preserving paste can be used in connection with the machine covers. Dirty goods in these days of light shades are a problem, especially in merchandise with bleached heels and toes or light colored ingrain work.

Operators should be penalized for work they spoil through carelessness, but care should be taken not to penalize them when the goods are knit wrong. A good operator usually knows when she is at fault and will do better work if she is treated fairly. A simple method is to have the operator show the fixer any bad work, such as tucked stitches, poor loose courses, etc., *before* she puts it on her machine. Then arrangements can be made not to penalize her unjustly. She should, however, be expected to do good looping on seconds, providing, of course, that the imperfection is not where it will hinder looping. A very effective method is for the inspection department to immediately send a sample of bad work found to the fixer or foreman and get to the bottom of it quickly. If an operator sees a sample of her bad work there will be no doubt about it in her mind and they will do better work if they know that bad work comes back immediately.

A daily record of each operator's work should be posted, which shows Name, Number, Dozens Looped, Number of Imperfects, and Percentage. It is very effective to keep five or six sheets on the record board at one time where they can all be plainly seen. This gives the operator, fixer, foreman and superintendent "Facts at a Glance" in individual cases or as a whole, and puts a clear picture of what's being done in everyone's mind. Time and motion studies by groups or individual cases are valuable and will help get operators on the work for which they are best suited. Several "talkers" in the same row will hinder production as will late combers or habitual absentees. Born trouble-makers and cranks (there are some in most mills) should be eliminated and a few pace-setters put in their places. If rates are within reason and an operator is not earning what she should, providing she works regularly, the mill usually loses more than the operator. Something should be done to correct such a situation at once.

Last, but not least, a kind and encouraging word to the operators from the fixer, foreman or superintendent, will do a lot of good toward better looping.

I do not offer the foregoing as a cure-all for losses in looping, and much could be added. Various conditions may require different methods, but the principles remain the same, and humans are very much alike the world over. A clear picture of what it's all about is really what it takes to get things done. Some call it team work, some co-operation, some horse sense, but no single word describes what it takes to do things better than the one a very able writer for COTTON chooses, namely *Attitude*.

CONTRIBUTOR No. 6066.

## Points on Boarding Half-Hose.

EDITOR COTTON:

I appreciate very much the answer of Fred T. Gaines to my questions on manufacturing men's half-hose. (This answer appeared in article form on page 95 of the March issue of COTTON.) There are several other questions I should like to ask this man and others who will answer them.

What type of boarding equipment is best? We are interested in making a sock with approximately 13 ounces gray weight or 14 ounces gray weight. To do this, it would be necessary for us to use a 15 link-15 link set-up for the foot and leg, and when we do this with a double sole of 80s/1, the boards do not dry the socks fast enough to get production through, so we have changed to 100s/1, and this still gives us a slow production and there are cases where we are unable to get the sock to fit the board in the foot or the leg. We would like to know just what type of board is most adaptable, when using 125 denier rayon plaited over 120 denier Celanese, with a set-up of 14-14 or 15-15?

CONTRIBUTOR No. 6012.

### An Answer.

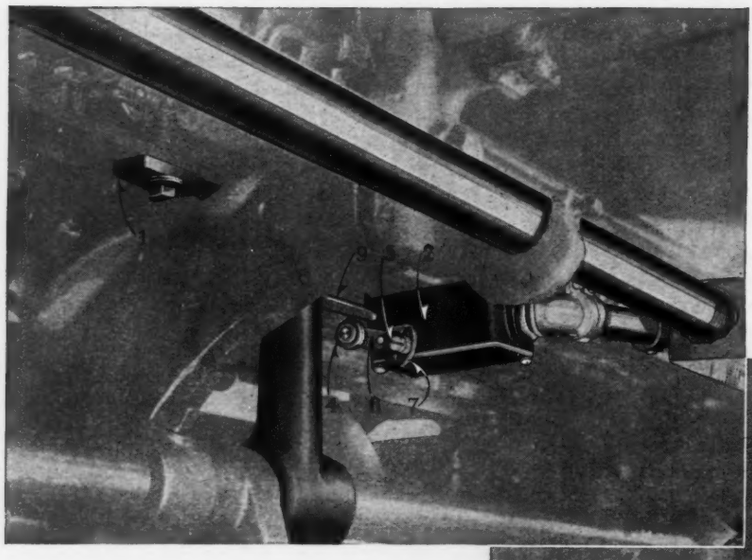
EDITOR COTTON:

Answering the further questions of "CONTRIBUTOR No. 6012", concerning boarding equipment, the writer's experience includes all types of metal drying forms without considering equipment used prior to the development of the metal form. Any of this equipment, provided the goods fit the forms reasonably well, should take care of the contributor's production under the following reasonable conditions.

To each boarder are assigned 24 forms, which is a half-hose set. (In some instances the writer has found it necessary to use as many as 36 forms on goods heavier than those mentioned here.)

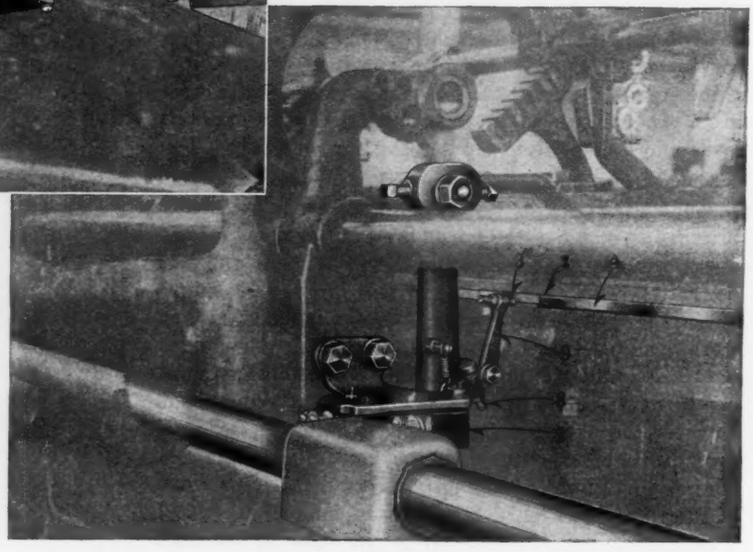
In boarding, 24 socks are put on the first round and thereafter the boarder should strip any number of socks, not exceeding six at a time, and replace these before proceeding to strip additional ones, and follow this sequence, which should allow ample time for dry-

# *Incorporating that*
# "Ounce of Prevention"



*The Coulier Motion Safety Switch*

*(Patent Applied For)*



**IT is rare indeed that anything ever happens to the Coulier Motion of a Reading Machine. But, since no metal or no operator is infallible, there exists the possibility of "something going wrong" with this mechanism.**

**To prevent excess breakage in the event that the Coulier Motion fails to function properly, all Reading Machines are now equipped with a safety device that will trip a limit switch and bring the machine to an immediate stop.**

**The parts of the machine utilized for the operation of this switch are one of the Back Catchbar Levers and the Slur Cam Connecting Bar. By means of a cam (1—Fig. 1) the switch is kept closed so long as the Coulier Motion is operating properly, and is opened only when the Coulier Motion fails to function.**

## TEXTILE MACHINE WORKS

**READING, PENNA.**

ing. This is assumed that the goods fit the boards reasonably well, as mentioned, and if not, and the slackening of the double sole with the use of a double-sole slackening device does not solve the fitting problem, it is possible the suppliers of the drying form could give this mill assistance as regards the proper shape forms required.

Furthermore, it is assumed that the drying forms are properly mounted and are being supplied with reasonably dry steam with as high pressure as is recommended for such boards, and that drainage is well taken care of with proper traps on each pipe. (In instances vacuum pumps have been used to advantage in returning the condensation to the boiler.)

If after checking over these points, particularly including proper slackening for the double sole, and there is still reason for doing so, some relief might be obtained by using a 45 or 55 denier fugitive tint acetate as a double sole yarn. But, anyway, I feel confident that after going over this situation as outlined, the source of this contributor's difficulty, and hence the solution, will be revealed.

FRED T. GAINES.

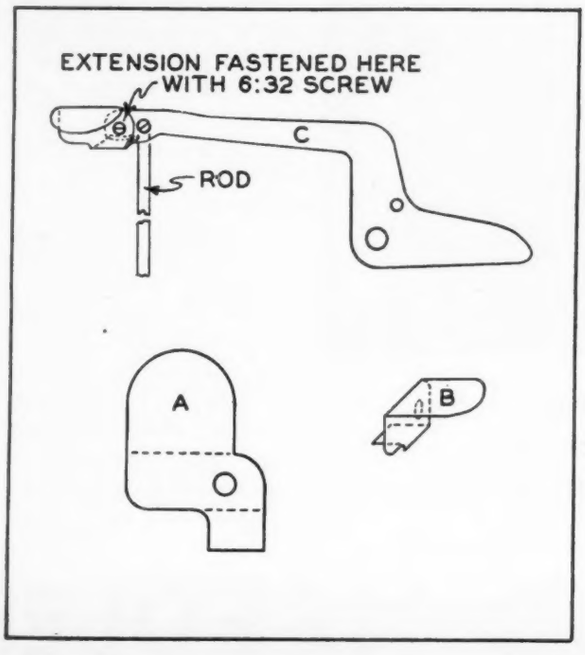
## Opening and Cleaning the Shears.

EDITOR COTTON:

At various times I have had different operators complain about how hard and inconvenient it is to open and close the shears by means of the shear lever on the Scott & Williams machines. This is caused by the shear lever not being long enough at the front end to allow one to press it down with a minimum effort.

About every time a machine is re-threaded, or the clamps or shears cleaned out, it is necessary to use this shear lever. When the machinery builders designed this part I believe they failed to take the temperament of the operator into consideration.

By designing an extension for this shear lever, I find that I have removed a lot of grief that was formerly the operator's, so, in the hope that it may prove of benefit to others, I am passing a description of it along for your readers.




To make this extension I use a piece of 1/16-inch flat iron and cut it out as shown by *A*, Fig. 1. This sketch represents the actual size of the pattern. A hole is then drilled with a No. 28 drill for a 6/32 screw, also shown by *A*. The piece of metal is then bent on the dotted lines as shown by *B*. By referring to *C* it may be seen how this attachment is put on the shear lever.

I believe anyone trying this will find it to prove well worth while.

CONTRIBUTOR No. 4889.

## Some Thoughts for Superintendents.

**Straight from the mind and experience of a knitting mill superintendent come these thoughts which will be useful to you.**

EDITOR COTTON:

Mechanical engineers are agreed that the most efficient mechanism is produced with the fewest working parts, and by the same line of reasoning, textile engineers should remember that the most efficient mill organization also is made up of the fewest parts.

To go a step further, each part must function in perfect synchronization with the next. There must be no lost motion, or the whole will suffer with that part or unit which represents any lost motion.

*"The wise superintendent is he who gives the fewest orders but expects the greatest results."*

*"Take your overseers' good intentions for granted, but watch your own."*

*"If you are too conservative, you will never produce alarming results, but your conservatism may be the means of others producing them."*

*"Mild criticisms will possibly accomplish things at times, but not sufficiently to warrant their use."*

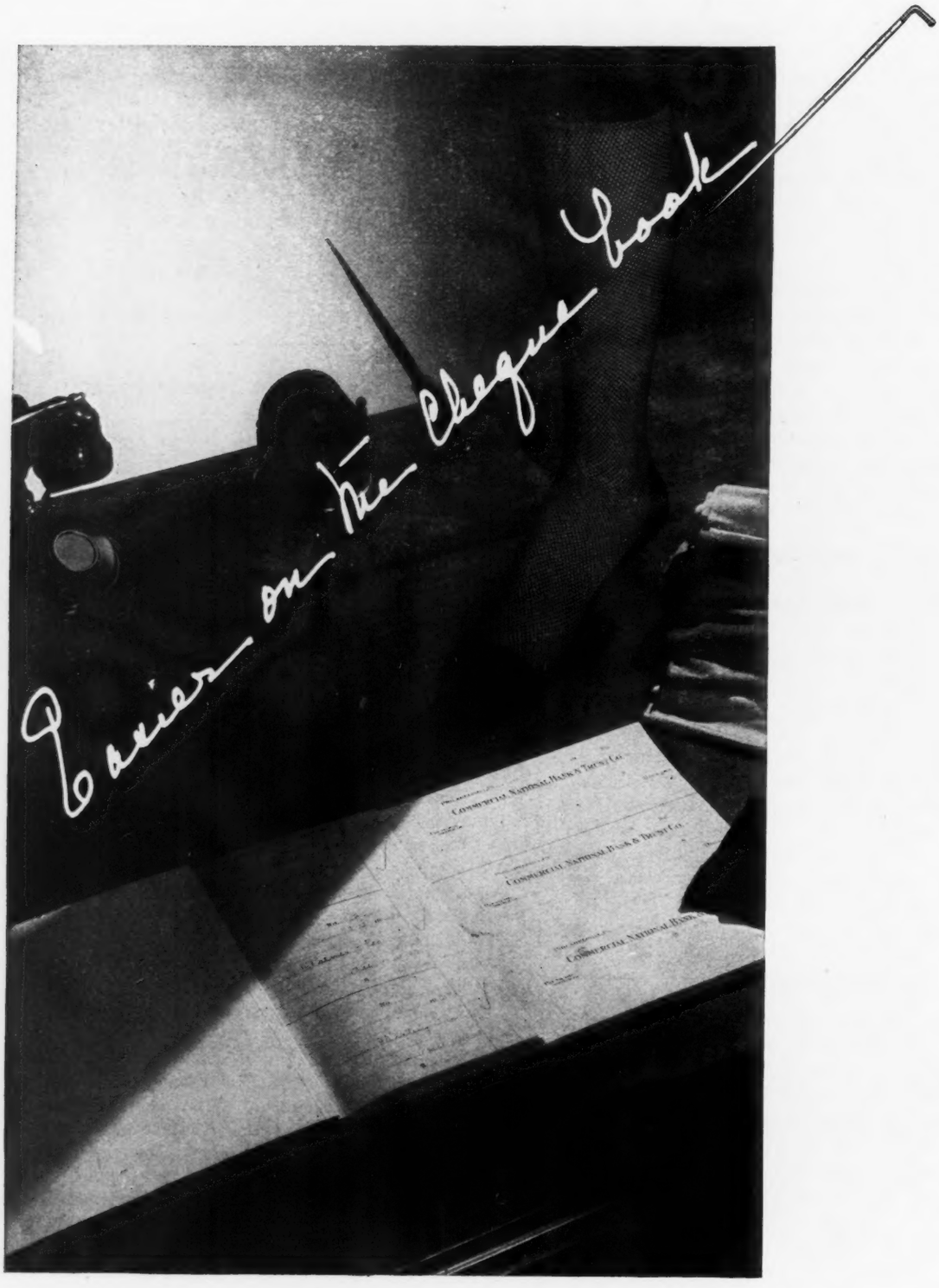
*"Remember, the less criticism you get the harder will be your road to success."*

*"I sympathize with the man who is only the servant of a machine."*

The efficiency of an organization is dependent upon the efficiency of each worker in the organization. Only through mutual help and understanding can each member be of the greatest usefulness to himself and to the company employing him.

*"When loyalty leaves the earth there will be nothing worth while remaining, for the joy will have gone from life."*

The wise executive instills loyalty in the hearts of all his employees, he causes them to feel that they will receive fair treatment at all times, that their problems individually as well as collectively are real and of as great magnitude within their circle as are his own. In return for his consideration of them he will be amply repaid by little extra attentions to detail at this or that task, by suggestions and ideas which never can be obtained other than from the individual who actually is engaged in this or that particular work—all of which, added together from the innumerable sources, becomes of great magni-




Royersford's customers always come back, but not too often, because better needles mean fewer needles and a longer time between "stops".

ROYERSFORD NEEDLE WORKS, INC. · ROYERSFORD, PENNA.

ROYERSFORD NEEDLES

STANDARD STEEL AND DURAKROME

tude and represents a real, tangible asset to the stockholders or owners of the concern.

A good thing to remember is that, *"Two thirds of promotion is motion."*

The word efficiency has been used extensively in the last few years and has, through misuse and abuse, become something to be feared by the working man. Rightfully applied, it is his best friend, for it eliminates waste and bad manufacturing practices, reduces overhead and enables the mill or business to continue to operate at a profit in the face of keenest competition, thereby assuring the employee of continued employment at a wage consistent with his ability. It delegates to the skilled operative that portion of his work requiring skill and to unskilled hands the unskilled task.

Wrongfully applied, it will prove a handicap to the proper functioning of a mill personnel and increase the overhead, and, like "the devils who dwelt therein", the last state of that concern will be worse than the first.

The executive who adopts the policy, along manufacturing lines, that nothing is impossible, that when certain results are unattainable that it is due to the fact that a proper solution to the problem has not been found rather than it cannot be done, will make real progress.

*"Bring thought to your problems and see them vanish."*

In more recent years many concerns have weeded out the middle-aged worker and supplanted him with a younger man, irrespective of the worker's ability. Some concerns have carried it to the point where they have set definite age limits as low as 45 years, others have ruled that no grey-haired individual shall be hired.

A little thought to such condition as this must make it apparent that where skilled labor is required no such rules can be applied in the interests of true efficiency.

We will first consider the advantages of such a procedure and must confine ourselves to generalizations, for there are exceptional tasks where our arguments would be of no value, but being the exception they but support our theory.

Youth will give quicker apprehension, show more agility, possess better sight, and show increased production. Maturity will show greater capacity for retaining, more willingness to accept restraining orders, better quality of work through pride of accomplishment, greater loyalty, less tendency to drift to other fields—the expense of his education not being borne by one firm to the advantage of a competitor. There is no task requiring skilled labor wherein the older employee through his continued application to his task has not acquired an understanding wholly foreign to any younger man.

Having had considerable experience along manufacturing lines for a period of years, it is my firm conviction that no age limit can be set for the employment of operatives. Such matters, a sensible superintendent will feel, come within the scope of his foreman's ability, and as his success depends upon the ability of the organization built around his foremen, he would be unwise to place restriction upon the foremen's judgment when it comes to a matter of how old or young an employee should be.

The future, the very near future, will prove the foregoing statements. We have pretty nearly passed the mad scramble for production, and soon, very soon, quality will enjoy its place in the sun, the mature and "educated to his task" employee will be an organization's best asset.

*"Knowledge requires wisdom, and wisdom requires counsel." "Youth requires maturity, and maturity requires age."* The proper admixture of all of these is the ideal personnel.

CONTRIBUTOR No. 6043.

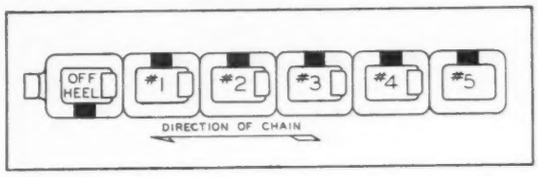
## A Method of Marking Sizes.

EDITOR COTTON:

In line with the suggestion of one of your writers, here is another idea which may come under the head of old stuff for most of your readers, but which may help some of them.

Until a few years ago our finishing departments were constantly having trouble in sizing and pairing the seamless hosiery made on our Model K machines. At that time these hose had no mark of any kind to indicate their size, the size of each batch depending upon the production tag accompanying them. Some of these production tags were always getting lost or misplaced at times, leaving it a matter of guess work as to the actual size of the goods. During each of the manufacturing operations there was always work which was questioned as to size due to misplaced or improperly marked tags.

As a means of remedying this trouble we made use of the fashion marks on these machines, using a designated number of fashion tucks in the foot to designate each size. When a size change is made to the machines, we add or subtract fashion links in the foot, instead of changing plain links as we formerly did. This requires no more work than formerly, and the result is that each hose is marked as to size. Whether production tags are lost or not, reference can always be made as to size, by noting the number of tuck stitches in the foot. The accompanying illustration shows clearly how this was done. The spacing of these fashion tucks depends upon individual preference. Single or double links can be used.




The numbered links as shown in the illustration are included in the foot section of all string work chains as follows:

| | | |
|---|---|---|
| No. links to be used | For Size 8 | (No marks) |
| No. 1 only | For Size 8½ | ( 1 mark ) |
| Nos. 1 and 2 only | For Size 9 | ( 2 marks) |
| Nos. 1, 2 and 3 only | For Size 9½ | ( 3 marks) |
| Nos. 1, 2, 3 and 4 only | For Size 10 | ( 4 marks) |
| Nos. 1, 2, 3, 4, 5 (See illustration) | For Size 10½ | ( 5 marks) |

CONTRIBUTOR No. 6071.

Mock Wrap
Half Hose

Pattern Mesh
Ladies'

# BANNER
# UNIVERSAL STITCH MACHINE

Plain Mesh

Pattern Mesh

Float Stitch

ALL SIZES—2″—2¼″—2½″—2¾″—3″—3¼″—3½″

**KNITS**

PLAIN MESH
PATTERN MESH
FLOAT STITCH PATTERNS
*Float-Stitch and Pattern Mesh Combinations*
MOCK WRAP PATTERNS

MOCK WRAP CLOCKS and
LACE CLOCKS . . . *add clocking attachment*
*. . . for 3 color mock wrap clocks add horizontal striper.*

**Universal Stitch with double selection for ladies' and misses' hose gives 13 step pattern or plain mesh in the leg with an additional 13 steps for patterning in the top.**
**As an attachment for machines now in operation Banner Universal Stitch can be applied to any high cylinder Banner machine from 2″ diameter up, and up to and including 70 gauge. Low cylinders can be changed to high at a nominal cost, for applying the attachment.**

## HEMPHILL COMPANY, PAWTUCKET, R. I.

General Sales Offices & Machine Exhibit: 93 Worth St., New York

| Philadelphia | Chattanooga | High Point |
|---|---|---|
| 2286 No. Gratz St. | James Bldg. | Commercial Bank Bldg. |

FOR QUICK SERVICE ON NEEDLES, SINKERS, JACKS, LINKS AND PATTERN SUPPLIES CALL, WRITE OR WIRE YOUR NEAREST BANNER BRANCH OFFICE.

## More Information on Seaming Thread for Fine Gauge Chiffon.

EDITOR COTTON:

I am interested in the discussion of the question from "CONTRIBUTOR No. 6054", who said that he had not been able to use silk satisfactorily as a seaming thread for a fine gauge all-silk chiffon full-fashioned stocking. He said he used a special thread made from regular tram silk by twisting 5 threads right 8 turns, then twisting two of these five threads left twist 10 turns, making a 10-thread silk, but that this did not wear well, and that he has found a 90s/3 Sak. to be best.

Our experience has been pretty much the same as his. There is no question in my mind but that a cotton seam will give far better wear than a silk seam. For service weight numbers we use 80s/3 Sak. and on some chiffons 60s/2 Sak. As for complaints against these seams because of poor wear in the heel splicing, we hardly if ever have received any.

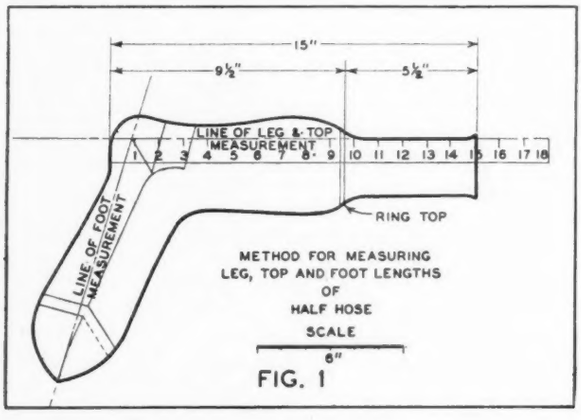
In our all-silk chiffon numbers, where we use a silk seam, we haven't found anything as satisfactory as a cotton seam, and complaints are quite frequent. Our yarn is twisted similar to that of "CONTRIBUTOR No. 6054", only we use three ends of four thread in the place of two ends of five thread. Our experience with spun silk has been that it does not wear as well as a plied silk similar to the construction given.

CONTRIBUTOR No. 6061.

## Counts Ring Top as Part of Leg.

A subscriber recently submitted a sample of men's half-hose, asking whether the ring top should be counted in the leg or in the rib top in measuring for standard lengths. The following reply has been received:

To simplify the reply and show a method of measurement, Fig. 1 is referred to. This illustration, outlining the component parts of a half-hose, shows the proper way to place a stocking on the table in front of one for taking self-evident measurements, i.e., with the toe to the left, top to the right, and heel and back of sock furthest away from the one making the measurement. The ruler for measuring is used as sketched.


15"
9½"
5½"
LINE OF LEG & TOP MEASUREMENT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
LINE OF FOOT MEASUREMENT
RING TOP
METHOD FOR MEASURING LEG, TOP AND FOOT LENGTHS OF HALF HOSE
SCALE
6"
FIG. 1

Strictly speaking, the ring top should be considered as a portion of the leg measurement, and is plain knitting, the same as the leg, on one set of cylinder needles; that is, for half-hose the leg measurement should begin at the base of the heel past the gore, and include the ring top up to the loose course of the rib top. Of course, the term "ring top" is somewhat misleading for it is not a portion of the rib top, as the rib top is made on two sets of needles, and since being named thusly, some choose to count the ring top in top measurements while others count it in leg measurements.

The difference in choice is of little consequence, as no customer is going to kick as long as the total length, including the leg and top, is standard. The ring top being only about ¼-inch of leg and top measurements combined serves as a balance between the rib top and the leg, and is preferable as a leg measurement, even to the point of making the leg slightly longer than standard at the expense of the top length, for a good full leg length is more desirable with a top less than standard length than a top heavy, short-legged sock.

FRED T. GAINES.

## How Do You Move Machines?

EDITOR COTTON:

We do a considerable amount of style changing on our seamless machines. Most of these style changes necessitate our pulling these machines by hand from the line shaft to our workshop, which happens to be some distance away. It occurred to me that there may be some simple machine conveyor which would eliminate the necessity of dragging the machines by hand, and make this moving job easier. I would appreciate hearing from other "KNITTING KINKS" readers as to how they are handling this problem.

CONTRIBUTOR No. 6067.

## Causes of Dial Running Fast and Slow.

EDITOR COTTON:

I note in your January issue that "CONTRIBUTOR No. 6011" is having trouble with the dial being fast and slow on a Model H H machine and is asking for advice as to how to overcome this trouble.

First, I would suggest that he check to see that his dial is in perfect center, then see that the dial post is perfectly straight. Next I would see if the cylinder has any side play in the cam ring, as this could cause the trouble, the cylinder wabbling to one side or the other. Next, I would try changing dials with a machine that was working perfectly as it is possible that the slots in the dial are not cut accurately.

After all of these things have been tried, if the dial still runs fast and slow, the trouble is bound to be in the gears. One or more of these gears are cut wrong or are worn more on one side than the other, or it is possible that the large bevel gear in the bed plate is worn more on one side than the other.

If these suggestions are tried out in the order that they have been suggested, I feel sure that this contributor will overcome his trouble.

CONTRIBUTOR No. 6047.

# The KNIT GOODS MARKETS

THE full-fashioned hosiery industry may be safely said to be heading toward the way out of a condition which in any diagnosis of its ailment, must be attributed to an excess of confidence in the markets to absorb whatever quantities of hosiery might be thrown upon it. That the climb will be slower than the plunge is beyond argument.

There will this year be less new installations and more scrapping of obsolete equipment than probably ever was witnessed in the recollection of the oldest of manufacturers—less installations for the reason, as stated tersely by a representative of one of the leading builders of full-fashioned hosiery machines, "few manufacturers will risk investment of $10,000 and more per machine in equipment for making 50-cent stockings."

There will be an increasing number of coarse gauge machines at the end of the period of their usefulness for any purpose other than that served by raw material. So, it is pointed out by machine building and hosiery producing interests, potential production in the full-fashioned hosiery industry will be on a descending scale while the weaker units are dropping out and the stronger are conservatively and gradually adapting their program to a different industrial and distribution era.

That low price hosiery will be made on high cost machines is doubtless foreseen by most factors, but the trend will be to better construction, and this will be the more generally recognized as the mercernarily cheapened sinks to new low price levels—a case of an evil working out its own remedy. Whether single unit machines, for knitting full-fashioned stockings from top to toe and therefore eliminating toppers and footers, is going to solve the problem of lower operating cost was discussed with representatives of four builders of that type machine following the recent Knitting Arts Exhibition, in which the only echo of the previous year's promotional campaign of the single unit device was confined to exhibits of stockings knitted on the start-to-finish plan with one machine, and charts and figures for emphasizing the respective builders' confidence in the innovation.

### Mr. Hirsch Wants to Be Shown.

Admittedly skeptical last year of any material advantage accruing from use of single unit machines, Louis Hirsch Textile Machines, Inc., United States distributor of Kalio machines of the Karl Lieberknecht Company, has revised his notions only to the extent they may be better adapted to the knitting of ingrain hosiery and to style novelties, the latter often presenting intricate topping problems. But he is not so sure that dull silk is likely to be displaced by ingrain or that manufacturers have so much confidence in freak stockings that they would risk investment in many single unit machines which cost anywhere from $10,000 to $15,000 to be set up ready for producing. Mr. Hirsch seems to have a closer affinity for the 60- and 54-gauge machines of the Karl Lieberknecht Company such as are in use in the Oakbrook Hosiery Mills, Reading, where the first complete battery of four leggers and a footer of 60-gauge is being installed, and at present, knitting up two-thread silk, a venture that doubtless will be watched with considerable interest in the entire hosiery trade.

Alfred Hofmann, Inc., Schubert & Salzer Machines, and Robert Reiner, Inc. Reiner-Einseidel construction, are outspoken supporters of the single-unit method of knitting full-fashioned stockings. Dr. Reiner states that 12 of his "3-T" (single operation) machines will be in production within a year in the demonstrating plant at Westmont, N. J., for the Philadelphia sector. Four now are in operation. He says he believes that within five years, use of the single unit type will have become quite general. He sees economy in its adaptation on a full commercial basis. In which respect Dr. Reiner stands shoulder to shoulder with Alfred Hofmann, Inc.

### Alfred Hofmann Co. Enthusiastic.

An official of the Hofmann company likes the idea of turning off completed stockings, so that at the end of any given period there are no legs to be carried over. He stresses no unevenness of silk in feet and legs respectively, as a possible fault in stockings as they have been knitted and topped by the methods in use more than 35 years, and states that buyers for several large stores say their departments have had many returns because silk in feet and legs did not present satisfactory matching.

Single unit Jacquard machines of Schubert & Salzer build, it is officially stated, have been installed in a mill of the Gotham Silk Hosiery Co., Inc.; in the LaSalle Hosiery mill at Foxchase, near Philadelphia; Pohatcong mill at Washington, N. J.,; and Phoenix Hosiery Co. mill in Milwaukee. Thus, it is pointed out by Alfred Hofmann, Inc., and Robert Reiner, Inc., more single unit machines are in production than a year ago.

### Reading Company's Negative Position Unchanged.

Textile Machine Works, Reading, in a statement issued a year ago held out no hope that single unit construction would become popular, since it has been a subject of much experimentation for nearly 40 years and without winning approval from more than a few American manufacturers. A person speaking for this company says its ideas have undergone not the slightest change.

As expressed by four manufacturers of single unit machines, sentiment as to their future still stands two to two. One on the negative side, having a knowledge of the tactics of buyers for the trade for "chiseling" manufacturers out of modest profits accruing from reducing cost of operating, maintains

Suggested Adaptations of
Tuck-Stitch Construction

Sweaters
Crib Blankets
Beach Suits
Beach Robes
Sweat Shirts
Shoe Bags
Golf Suits
Sun Suits
Sport Dresses
Face Cloths
Towels
Laundry Bags

# TUCK-STITCH Underwear of DIXIE Durene!

The Dixie Mercerizing Company, after a careful survey of tuck-stitch knitting requirements, offers you Dixie durene especially prepared for tuck-stitch construction. This Dixie durene yarn is soft, pliable and smooth-running—ideally suited to the intricate tuck-stitch attachment—supplied natural or gassed, thoroughly bleached to a pure white, or dyed in bright pastel shades. We can furnish samples in sets of any required number of cones, and make shipment from stock.

When you investigate tuck-stitch for your line, when you are deciding on yarn, remember: Dixie will gladly send you samples. Just wire or write . . . . . .

**DIXIE MERCERIZING CO.**
CHATTANOOGA, TENNESSEE

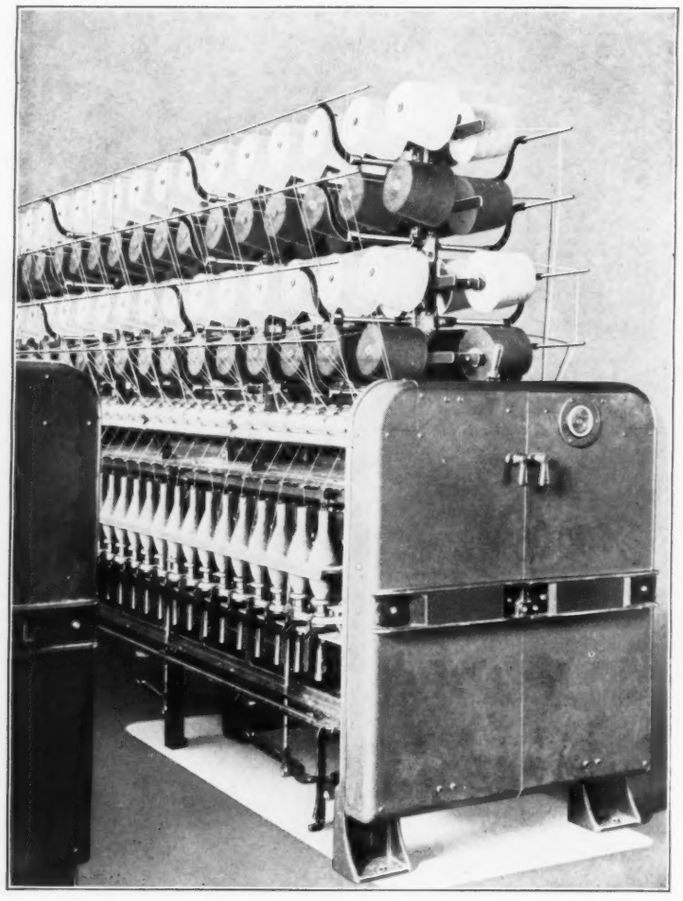
DIXIE Durene . . . A Product of Controlled Manufacture

CLOSE-UP OF
TUCK-STITCH
Highly Magnified

# TWISTING FROM CONES

*There are many advantages in the use of cone supply on twisters*

LEESONA



LEESONA

IN twisting yarn drawn from rotating packages, either spools or tubes, there is much variation in the tension on the yarn as between a full sized package and a small package, whereas in drawing over-end from stationary cones the stress on the yarn is the same whether from a full cone or one that carries a small quantity of yarn.

Practical results in mills have shown a substantial improvement in the quality of twisted yarn, there being less variation in the twist and greater strength uniformly in the yarn.

## UNIVERSAL WINDING COMPANY
BOSTON

332

# UNIVERSAL WINDERS

that, admitting for the sake of argument that the single unit device would cut mill overhead, "the retailers would get all of the difference, in competition for lower prices, and manufacturers of staples would have gained no advantage."

For the affirmative it is maintained that as manufacturers find it necessary to buy machinery for replacement they will be influenced by opportunity to reduce the cost of their product and, furthermore, "equip their mills for future rather than for meeting only current conditions."

Since prices for commodities, notably hosiery, seem to have declined in step with consumer resources, demand for the apparel that is essential in preserving the dress-up tradition may be expected to find a right fair market—and this contemplates no declining interest in silk stockings. So, while there seems every likelihood of less mechanical installation and more weeding out of obsolete and badly worn equipment, and keeping in mind extraordinary efforts on the part of distributors to promote sales, depression, which is a much overworked term, may have run its course in the curbing of sales of hosiery as an outstanding item in "keeping up with the well dressed procession."

## Non-Run Hose Patent Corporation To Market New Type Stocking Shortly

Interest in the new star which has risen in the hosiery firmament has shifted from mere speculation on the merits of the non-run stocking, to watching its progress in the markets and keeping tabs on the nature of the reception which it will be accorded by the final arbiter, the consuming public.

The control of the patents covering the non-run type of stocking declared early in April that the devices for its production had been perfected by the Textile Machine Works, Reading, Pa., and that enough of the machines would be in production by or before the middle of May to assure the appearance of the new candidate for woman's favor in at least a few leading stores in time to give woman an opportunity to give it a service trial by Memorial Day.

The non-run type of stocking as designed will cost woman more than the plain knit which has been staple for more than thirty years. The trade has been inviting the question, "Will she be willing to pay the difference in order to be spared the annoyance caused by the unexpected appearance of runs?"

Some hosierymen who profess to be able to forecast woman's disposition of matters combining style and price seem to hold a negative view. Of a dozen representative women encountered in retail stores in advance of the debut of the non-run stocking, it was almost a chorus that said in effect "Certainly, women will be glad to pay the difference, if not too great." So, there's nothing to do but wait for the verdict of the shopper jury. Meanwhile, the Textile Patents Corporation, which controls the patents under which the non-run stocking is said by its sponsors to be made, is receiving applications from manufacturers for license to produce the stocking.

The Textile Patents Corporation is chartered under the laws of Pennsylvania and is officered by William Meyer, president of the Apex Hosiery Co., as president; William R. Smith, of the law firm of Lucke & Smith, Philadelphia, vice president, and F. E. Struve, general manager of the Apex Hosiery Co., secretary and treasurer. A board of directors doubtless will be named after a number of licenses to make non-run-hosiery have been issued.

### To Control Production of Patented Stockings.

The plan of the patent corporation is unique, in that it provides not only for a controlled output and, it is understood, power to maintain prices for given types of construction, but contemplates co-operation with licenses in matter of marketing and advertising. It will thus be seen that, if the plans prove feasable and the new stocking be adopted by only an element willing to pay a reasonable price for immunity from runs, the year 1932, marking the centenary of the first application of power to knitting machinery, will be red-lettered in the history of the hosiery industry for the perfecting of a stitch in knitting hosiery that defies "running" as a result of a break in fabric. That is, if demonstrations with crudely constructed sample stockings shall be proved in actual service to have been a truthful record of performance.

It is fair to say in this connection that in severe tests witnessed by a representative of COTTON, it was "impossible to start runs by jabbing holes in the fabric." It was apparent to the lay mind that the device for knitting the new type of stocking as the original non-runner produces a lock-stitch.

The Textile Patents Corporation believes that research by Attorney Smith in the field of hosiery patents running back over a long period of years affords virtual assurance that there could be no successful infringement of the Schwartz patent for producing the non-run stitch. That there will be attempts to duplicate or improve on the company's construction is hardly to be doubted, considering the ambition to excel and the long history of imitations.

It was observed by a well known originator of hosiery producing devices that "what the hosiery industry needs is more manufacturers with ideas." As was pointed out, it has been the experience of many that by the time they had fully developed an idea and given physical proof of its value some imitator had beaten them to the market, stolen the idea and, with hurriedly devised means for cheapening construction to acquire the cream of the business in the innovation.

Whether the sponsors of the non-run type of stocking have, in this instance given the imitator who fattens on the ideas of others a more difficult job, is what not a few hosiers have been trying for some weeks to find out. As the object of the sponsors of the new stocking is to curb unethical competition, so far as that may be possible, and make the hosiery industry a safer one for investors and the markets safer for dealers, the results of launching of the 1932 non-run stocking will be of absorbing interest in the trade for some time, particularly as to the effect on cheapened hosiery in which a

tendency to run from breaks in the fabric never has been overcome. In the co-operation of the Textile Machine Works and, presumably, the Berkshire Knitting Mills, with the Apex Hosiery Co. and the Textile Patents Corporation, it is admitted in the trade that the corporation has substantial backing that may have far-reaching results in its activities in behalf of a better balanced market for hosiery.

Obviously there is no little skepticism of the ultimate outcome of the carefully laid plans of the non-run sponsors, and with due deference to their sincerity and enthusiasm, it appears to some interests that its position in the mind of the trade is not unlike that of the single unit machine.

## Report Broader Interest in Mesh Hosiery and Predict Lace Vogue for Next Fall

Keener and more widespread interest in women's mesh hosiery has developed since the beginning of spring, and confidence that fine mesh will survive the summer is stronger. There still are skeptics, of course, but it is noted that manufacturers of both full-fashioned and seamless mesh have had a very busy session. It appears the indicated waning of interest was confined mainly to buyers for stores which had taken in the warp-knit type as a price proposition and misjudged consumer sentiment. It became apparent that the drift was to the better types, exclusive of warp knit, and the latter class underwent a weeding out in a number of department stores, beginning around the latter part of March. This has had the effect of strengthening the position of fine mesh.

The Weinerth Knitting and Machine Co., Reading, one of the more successful seamless manufacturers in the Schuylkill Valley, sinch March has been operating day and night on mesh stockings for the popular price bracket. Another mill in Reading in the same category is that of the Fisher Hosiery Co. which became widely known in the retail trade of a few years ago for its Nightingale brand. The Brooks Hosiery Mills and the James O'Connell Co., seamless manufacturers in Philadelphia, have had a big mesh call, both finding it necessary to increase output. The Brooks has had considerable success with a fancy top number. The O'Connell Co. diverted a number of its machines from lace hosiery construction to the mesh type, producing a silk number to sell for 50-cents a pair. The cut-and-sewn type of net stocking was pushed strongly for a time and was blamed for a lull in interest in the full knitted.

While lace hosiery did not get the immediate wide response that was predicted for it, manufacturers recently buying new full-fashioned machinery report having bought also full tackle or Jacquard equipment, and opinion seems to be gaining ground that, being a pattern stocking somewhat cobwebby in gauziness, lace will come into almost universal demand following the summer mesh vogue. Production promises to be somewhat restricted by reason of high cost of equipment. Numbers of manufacturers might be quoted as favoring continued high prices for machinery, in order that builders may be compensated for so limiting their output that it should be some time before the hosiery industry again falls into the rut from which it is extricating itself.

A mill in Reading quite recently reduced its price for a warp-knit glove-silk leg mesh stocking to $6.25 a dozen, the cut being announced after some leading stores had commenced a clearance of stocks of this type. The Reading stocking now at $6.25 has a full-fashioned hem. The same company made a reduction in its prices for open mesh anklets, to $3 a dozen for children's and $4 for women's.

Schuylkill Hosiery Mills in Reading recently started on a curtailment program, after operating day and night for a time, in the manufacture of fancies for men and children. The Pilling & Madeley mill in Philadelphia making a somewhat similar line, has had a protracted day and night run.

## Children's Styles Viewed as Demanding Changes in Distribution Policies

While complaint had been heard of "withering competition" in children's and infants' lines, the latter selling for as little as 65 cents a dozen as to one or two numbers of several mills, there is indicated a good volume of spring distribution of socks and juvenile hosiery generally. While prices are probably at the lowest level, most manufacturers are understood to have been more favored this season in matter of profit than in recent years.

Children's lines, probably more than any other division of hosiery, seem to be undergoing changes in distribution, and it appears that this year will witness the elimination of more mill agents and more manufacturers establishing offices of their own in the leading wholesale markets. The J. W. Landenberger Co., children's hose, Philadelphia, for many years selling through E. M. Townsend & Co., New York, latterly the E. M. Townsend Textile Corporation, will sell its line direct to retailers. This is believed by the management to be necessary for the more satisfactory distribution of fancy hosiery, that where style and frequent changes are involved it is necessary for manufacturers to maintain the closest possible relation with customers. The same theory, it is held by some, applies to men's half-hose, which represent about as many combinations of silk, rayon, cotton and wool as does the children's group, and it is noteworthy that in some recent reports there has been a substantial increase in the use of cotton and rayon in combination for men's and children's.

### Sylvester to Manage Archer Fashioned Plant.

Archer Hosiery Mills, Columbus, Ga., is opening a New York office, with Samuel Weeks in charge, this apparently as a part of preparation for a program of expansion of the mill's lines sold directly to retailers, while at the same time relieving President Straus of a great measure of managerial responsibilities and enabling him to give more time exclusively to the sales department. Mr. Straus recently announced that W. M. Sylvester had been made manager, the appointment dating from May 1. Mr. Sylvester formerly was associated with Julius Kayser & Co., subsequently with Rollins Hosiery Mills and latterly with Cooper Wells & Co. He will be in full charge of full-fashioned manufacturing

operations in the Archer mill.

Women's cotton underwear to go into distribution for one dollar per dozen which made its appearance in the wholesale markets eight or ten weeks ago represented another bid for business on mere price for the distributor to pay. Almost simultaneously with this proposal to produce cheaper, instead of better cotton goods as an advantage accruing from lower price cotton being available, a western concern formulated a program for exploiting a line of underwear made from durene for which it was expected a slightly higher price might be obtained than that which combed yarn garments of a similar type have been fetching.

### Competition Among Mills for Business in Women's Cotton Vests for $1.00 a Dozen

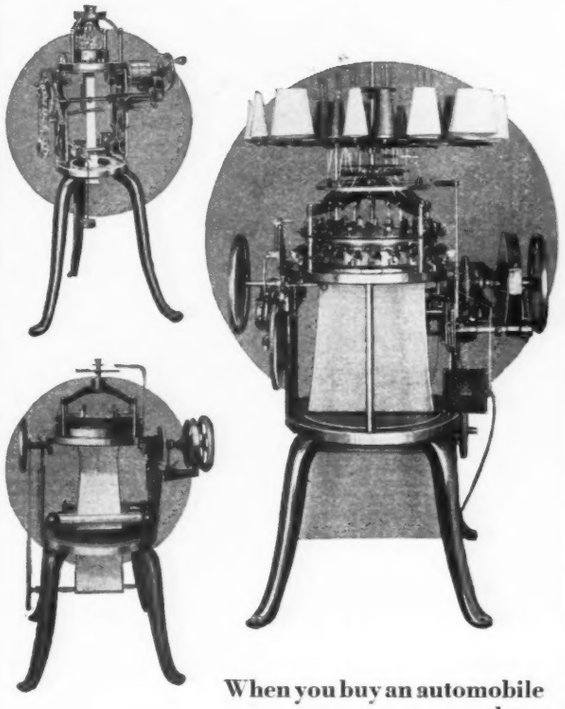
The dollar a dozen vests were of 26s single carded in the purchase of which the manufacturers exacted from dealers a severe shading, on the representation they were presenting something new and that if it met with favor, they would be steady customers for large quantities of yarn. The vests, with the idea of minimizing cost, were packed two dozen to a carton. Manufacturers had figured close, their size 48 vests of one important mill costing it $1.01 a dozen. The vests met with a fairly hearty response from jobbers and a right good volume of business was taken. One manufacturer conceived the idea of packing them in cartons of a dozen each as a more attractive form, viewed from retailer standpoint. Whether the vests were better than substandards was questioned by one of the manufacturers who also doubted that some of the 12-pound cotton ribbed union suits for men were of first quality at $3.57½ a dozen, a drop from $4.00 at the opening.

The distributor who conceived the idea of a women's mercerized underwear garment as an improvement over the concern's combed yarn line placed an order with a middle west manufacturer for making up a trial lot. About the time production was to be started, the manufacturer was advised by a mercerizer in the East that prices for mercerized yarns had been advanced. He found it necessary to increase the price of the underwear to the jobber by approximately 22½ cents a dozen, offering, however, to make up a half case at the original price. Upon receipt of the manufacturer's notice of the increased price due to an advance in mercerized yarns, the jobber cancelled the order.

The advance in mercerized yarns was announced in Philadelphia about the middle of March, effective immediately. Prior to the advance, numbers of manufacturers, it was stated in yarn circles, bought for their requirements for some time. The advance went on just after the middle west mill received the jobber's order and but a few days before the goods would have been in work but for the inopportune upward revision in mercerized yarn, a week or two before cotton went into a radical drop, losing around $2.00 a bale in one day.

Some of the producers of cotton underwear lines which would fit into the 20-cent groove of the Woolworth chain of stores have received an impression


MODERNIZE *your* PLANT *with* BRINTONS



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*Jersey Machines* Plain and Fancy Stitches.

*Rib Body Machines* For Underwear and Bathing Suits.

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*Special Knitting Machines* From ¼ inch to 36 inches.

When you buy an automobile—you are sure to purchase a car with a proud performance record. Why not apply the same excellent logic when you equip your mill with knitting machines? The name Brinton stands as high in its field, as Rolls-Royce, Packard, and Cadillac in the automotive industry.

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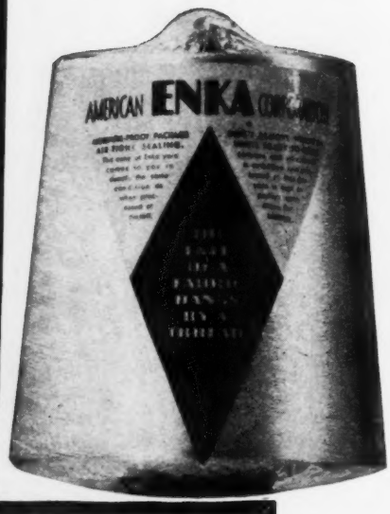


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**FABRIC**

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THE delicate, soft bloom attained by so many of this season's crepes originated in the mills of American Enka. For here is produced Perlglo, a yarn so rich in irridescent lustre that the fabrics into which it is made possess a life and character and softness which are not merely desirable, but distinctly unusual.

Perlglo, in its own right, is a rayon yarn of surpassing quality. But it owes much of its beauty and workability to the standards of excellence which govern its manufacture. Like all Enka yarns, every inch of Perlglo is produced under a set of uniformity requirements as rigid as our years of technical experience can make them. The result is Enka quality . . . Enka strength.

Enka Perlglo comes to you in weaving or knitting cones, in spools, in bleached or unbleached skeins, in standard or multifilaments, and in deniers from 50 to 300. Test Enka as rigorously as you will. Other mill operators have—and they found Enka Perlglo a surpassingly fine product, rigidly uniform in quality. Why not have us put on a trial run in your own mills?

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that powerful retailing interests sought to persuade the Woolworth company to discontinue that price bracket as one means for minimizing, so far as possible, any further dislocation of the regular price range. It is known in the trade that efforts in that direction were undertaken and it was intimated to some manufacturers that the question would be disposed of finally by the Woolworth company around the middle of April. Persons who have been close to the origin and course of the movement said they had no definite information as to its fate. One manufacturer of women's cotton underthings told of a line selling at around $1.75 a dozen which in a Woolworth store would be a 20-cent item in the event the 20-cent bracket remain after reasonable study of the effect of its tentative installation.

A question interesting manufacturers is, would inclusion of women's cotton vests and panties, for example, in chain store 20-cent lines detract from their value as regular items in single unit stores? Retailers, it is pointed out, have not been pushing cottons, while usually ready to lend a hand to the exploitation of rayon and the entire range of synthetic yarns in underwear. Rayon interests are said to be not taking kindly to the Woolworth 20-cent price, fearing it might mean a further cheapening of certain underwear items for adapting them to that bracket. Some few manufacturers of light weight, cotton underwear say they believe its sales would be increased by its addition to Woolworth lines in standard construction; the theory being that the indicated increasing number of Woolworth store customers would assure a greater number of users of cotton underwear.

Business in men's summer underwear necessarily was retarded in some extent by the March brand of weather continuing through a great part of April, and offerings of men's heavy weights for $3.75 a dozen for 12-pound union suits has not started buying of winter lines. Orders for road salesmen's samples have, of course, been placed by some jobbers.

## Comment on Taylor's April Full-Fashioned Hosiery Survey as to Gauge Location, Etc.

Outstanding in the survey of the full-fashioned hosiery industry by Dr. George W. Taylor of the industrial research department of the University of Pennsylvania, which was released April 1 for publication, are the showings as to the indicated popular gauge type of machines and the position of the southern field in the matter of percentage of actual production in November, 1931, and the stocks of hosiery and unfilled orders on January 1, 1932.

In a table covering an analysis of stocks, unfilled orders and productive capacity on January 1 last, and actual production in November, 1931, Dr. Taylor presents a classification by districts of which he names he names eight. This table appears on page 125.

It will be noted that the southern field as a whole produced 18.40 per cent of the total output in November last year, which was about equivalent to the estimated productive capacity reported for January 1, 1932. Virtually a like showing was made for the six other districts each. The southern field, includ-

**PRIDE...**
***and* PRESTIGE**

We are proud of the fact that the American Cotton Manufacturers Association has chosen the Atlanta Biltmore for their convention headquarters.

In selecting this hotel, members of the Association know they get that added "difference" between just-another-lodging-place and a hotel of distinction. They want to greet old friends in the industry and to meet new ones . . . what could be more fitting than the delightful atmosphere of the Biltmore?

Conveniently located—halfway between the Terminal and Peachtree Stations . . . a short taxi ride to the business center. Golfing privileges to some of the finest courses are extended to our guests. Popular priced meals served in all dining rooms.

All rooms are outside, airy, beautifully furnished, each with private bath and circulating ice water. Rates are surprisingly low . . . $3, $4, and $5, for single rooms; and $5, $6, $7, and $8 for double rooms.

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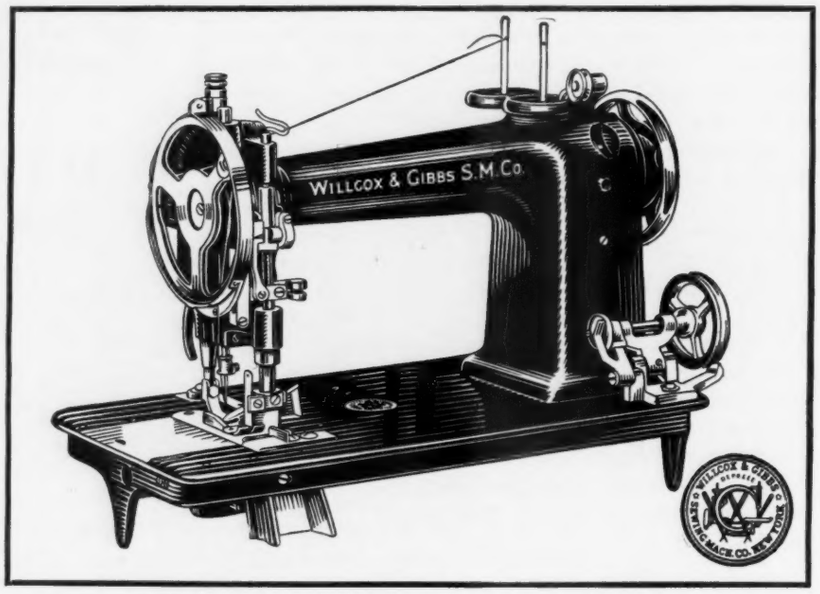
# WILLCOX & GIBBS PRESENT HIGH-SPEED LOCKSTITCH TRIMMING AND BINDING MACHINE

***3500 stitches per minute . . . stitching range from 7 to 34 stitches an inch . . . rotary take-up***

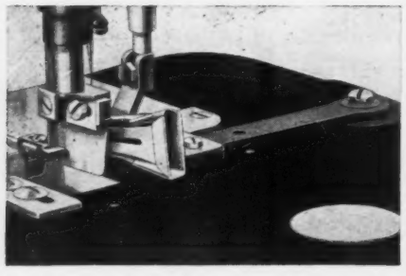
The High-Speed Lockstitch Trimming and Binding Machine presented by Willcox & Gibbs has features of original design. This machine, for the manufacture of clothing, boys' wash suits, house dresses, aprons, underwear, etc., provides an economical and speedy method of handling all operations which combine trimming and binding effects.



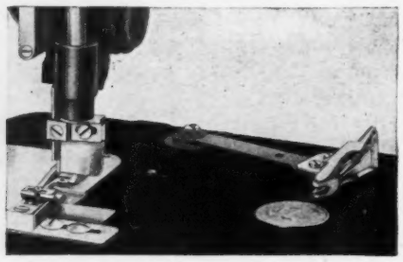

*High-Speed Lockstitch Trimming and Binding Machine*

## *Durability, Accuracy and Simplicity in Trimming Mechanism*

The trimming mechanism, of unique design, shows many important improvements over other and earlier machines. Durability, accurate operation and simplicity are evident throughout. The vertical bar carrying the upper trimming knife is so constructed that it can be thrown into and out of action instantly. There is a positive durable locking device to hold the bar in or out of operating position as desired. The lower trimming knife is carried on a slide block, which can be adjusted with a screw to conform exactly to the width of seam for which the upper knife has been adjusted. This slide block is fitted with a short spring action which insures a lower knife's remaining in cutting relation with the upper knife. These simple adjustments make it possible to change the machine from its narrowest to its widest trimming point without the change of any part. The range of the trimming adjustment is from 3/32 of an inch to 9/32 of an inch.



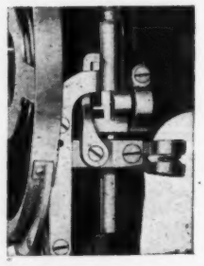
*This illustrates the binder and trimming mechanism in operating position*



*This illustrates the binder and trimming mechanism thrown out of operating position*

## *New Features in Binder and Binder Arm*

The Binder and Binder Arm are held secure in the operating position by a positive locking device which insures uniform performance at all times. For easy threading of the Binder, or when the Binder is not required, it can be thrown out of position or even removed without loosening any screws. Then, the Binder can be replaced in operating position without making a single adjustment. The Binder itself is attached to the Binder Arm with two screws so that various size Binders can be attached as desired.



*This illustrates the positive locking device of the trimmer when out of action*

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Please send further details regarding the application of the High-Speed Lockstitch Trimming & Binding Machine for.....
(state class of work in which you are interested).

Firm Name.....

Individual.....

Address.....

| District | January 1932 | | | Nov. 1931 |
|---|---|---|---|---|
| | Stock | Unfilled Orders | Productive Capacity | Actual Production |
| Philadelphia | 27.7 | 38.5 | 32.0 | 31.2 |
| Reading | 16.9 | 21.5 | 14.7 | 14.6 |
| Other Pennsylvania | 10.0 | 7.8 | 10.7 | 9.4 |
| New York-New Jersey | 4.0 | 1.6 | 4.0 | 4.1 |
| New York*-New England | 1.2 | .2 | 2.7 | 2.3 |
| North Carolina | 10.3 | 23.9 | 11.3 | 13.2 |
| South** | 4.3 | 3.1 | 5.2 | 5.2 |
| West | 25.6 | 3.4 | 19.4 | 20.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

*Northern part of New York
**Other than North Carolina

ing North Carolina ranked first in actual production in November, excepting Philadelphia from the comparison, indicating rapid strides in the growth of the full-fashioned industry south of Mason and Dixon in the past decade. North Carolina alone, on which Dr. Taylor reports separately from the remainder of the southern states, is credited with about one-third the productive capacity of Philadelphia and with 11.3 per cent of the total for the entire industry, in comparison with 14.7 per cent for the Reading, Pa., district.

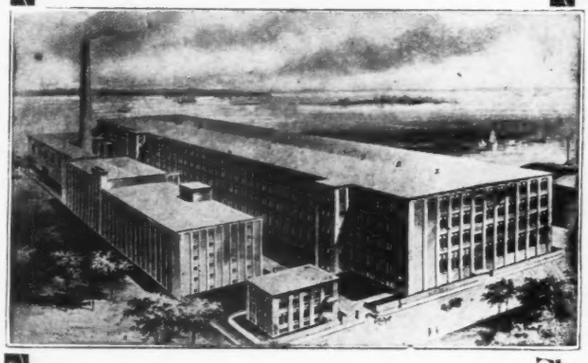
In matter of stocks and unfilled orders on January 1, 1932, North Carolina was credited with having 23.9 per cent and the South as a whole, 27 per cent, comparing with 38.5 per cent for Philadelphia and 21.5 per cent for the Reading district, thus occupying the second best position in this respect. The southern area now provides 16½ per cent of the country's productive capacity as reported by manufacturers January 1 last, or about one-half that of Philadelphia.

## 42-Gauge Hosiery Continues Important Factor; 39-Gauge Still in Good Demand, Report Shows

What may be regarded a most amazing showing by the recent survey relates to the matter of gauge, especially interesting when reference is made to previous reports and predictions. From the report of a survey released March 11, 1931, is taken the following: "Table 1 indicates that almost one-half of the new machinery installed in 1930 was 45-gauge, 42-gauge ranking next and representing over one-third. Certainly the 42-gauge has continued its tendency to become a smaller per cent of the yearly output. Future installation will be mainly of 45-gauge, with possible growing importance of 48-gauge type."

Keeping the 1930 figures in mind, it is interesting to note from the survey report distributed to manufacturers on April 1, 1932, that the November 1931 production was 54.6 per cent 42 gauge, which was slightly more than twice that of 45-gauge. Yet from June to November, production of 45-gauge increased by 15.8 per cent, comparing with a gain of but 9.1 per cent for 42-gauge. Unfilled orders January 1 last were of 59.8 per cent 42-gauge to 16.7 per cent of 45-gauge. It may be recalled that around five years ago a leading southern organization making a con-


Quissett Mill
New Bedford, Mass.



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RASH PROMISES and various claims of one sort or another may land occasional yarn orders—but business that repeats of its own accord results from quality and uniformity.

The quality and uniformity of Quissett is evidenced through the predominance of this brand on current specification sheets. A predominance that has enjoyed consistent growth through its years of progressive, dependable service.

**Carded and Combed Yarns in all Numbers and Descriptions.**

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**Egyptians, Sea Island, Peelers, Sakelarides, Pimas, Peruvians and Quitex.**

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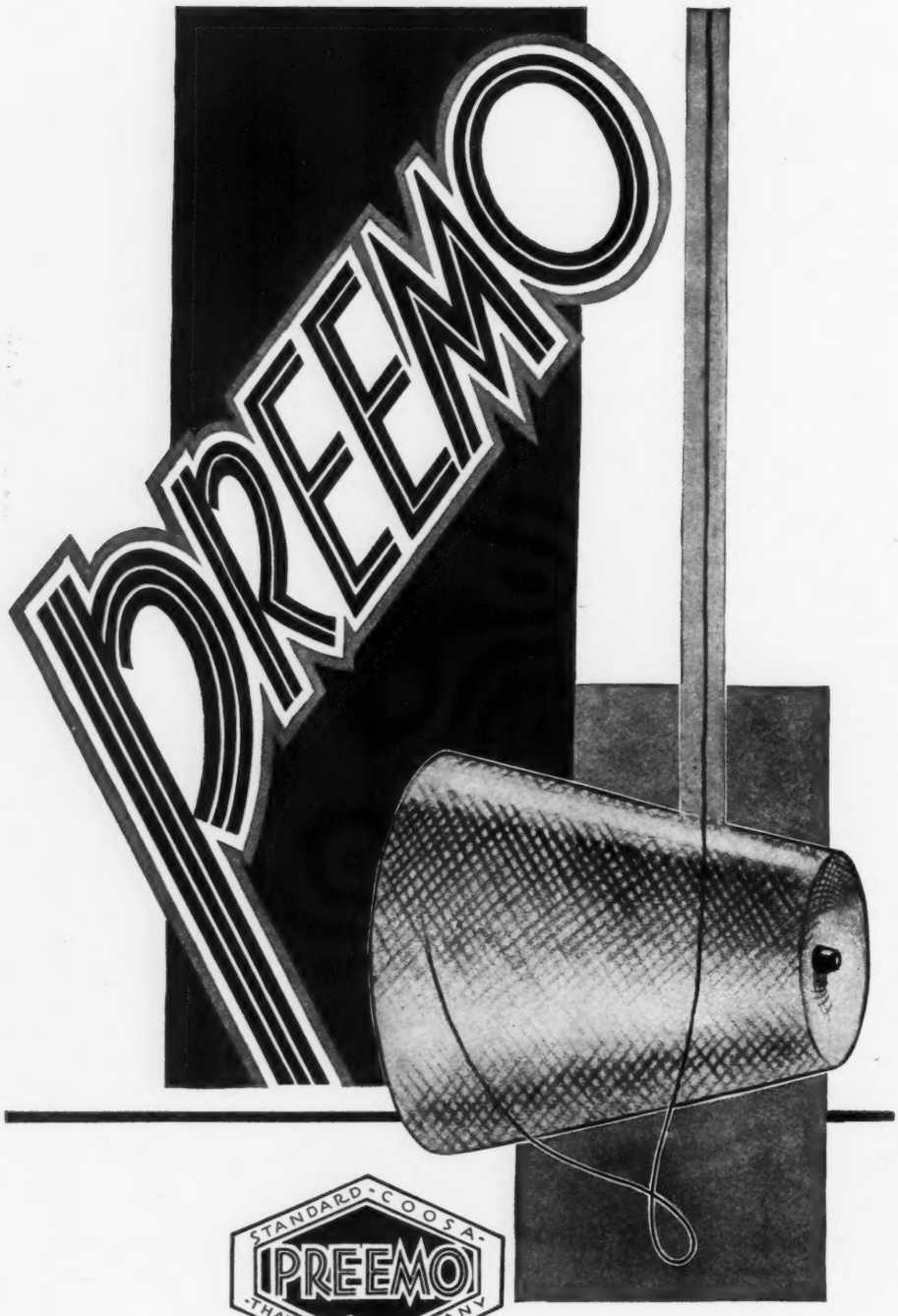


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The mercerized yarn for satin-smooth finish, superior strength and luster. Of interest *only* to makers of quality fabrics — knitted or woven.

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siderable installation of new machines explained that "the additions were 45-gauge, as the company was giving consideration to future demand."

The disclosures as to the position of 42-gauge hosiery present practically nothing new, for in a survey as of June last, reporting a 66.5 per cent of plant operation, 42-gauge machines represented 73.9 per cent of the operating as a whole. Viewed, therefore, from almost any angle, the position of 42-gauge presents some surprises, possibly to be accounted for by the demand for price hosiery which became quite pronounced in 1931. The same may be said of 39-gauge, and for the same reason, for in the report of the survey as of last January 1, 39-gauge represented 13.7 per cent of the estimated productive capacity, ranking third in this respect, and second in matter of unfilled orders representing about one-half of the productive capacity of 45-gauge. In ratio of unfilled orders to stock, 39-gauge is in first position.

In a 1929 census of knitting machines, one third of all were of 39-gauge, it is related in the recent report of the January 1 survey, which states: "Apparently the advance orders that are placed provide mainly for 39- and 42-gauge goods."

The release of April 1 was supplemental to Report No. 5, which was released February 4 last, and an analysis thereof presented in the March issue of COTTON. The present release provides more complete data as of January 1 last, estimates that the full-fashioned industry "is capable of producing over 3,000,000 dozen pairs of stockings per month," and that stocks in mills on January 1, 1932, were "slightly in excess of 3,500,000 dozen pairs," the mills thus carrying at that time more than one month's potential production.

## Among the Knitting Mills

F. GUERRANT, of Statesville, N. C., has become owner of the controlling interest in the Fidelity Hosiery Mills, Newton, N. C., having acquired the interest of the D. A. Ausley estate. Mr. Guerrant has been secretary of the Stimpson Full-Fashioned Hosiery Mill at Statesville, and is now devoting his time to the Newton mill.

It is announced that the Whitehead Hosiery Mills and Mohawk Hosiery Mills, Burlington, N. C., of which R. H. Whitehead is president, have purchased 50 new model seamless machines for replacement purposes.

W. T. Branson Co., Inc., Charlotte, N. C., has the contract for installing sprinkler equipment in the addition to the McCrary Hosiery Mills, at Asheboro, N. C.

Pacolet Knitting Co., Inc., Tryon, N. C., manufacturers of men's half hose, have completed the installation of a hydro-electric power plant.

### R. & H. Peroxygen Compounds.

The Roessler & Hasslacher Chemical Co., Inc., Niagara Falls, N. Y., have issued a booklet, "R. & H. Peroxygen Compounds—Properties and Uses" as of interest to those using these products or employing oxidation processes. In addition to important uses, the physical properties, specifications, shipping containers and other pertinent data on these peroxygen compounds are given. The products discussed are the peroxides of hydrogen, sodium, calcium, magnesium, zinc, and strontium; and the perborates of zinc and sodium.


BONE-DRY UNSHRINKABLE WELL-FINISHED

HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.

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*Manufacturers*
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OFFER THE ADVANTAGES OF LARGE FACILITIES — QUICK SERVICE

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**. . the Royce idea of SODIUM HYDROSULPHITE is now in production on a volume scale.**

**● Royce engineers and technicians have modest pride in this development of a comparatively rare and intricately controlled chemical formula.**

**● VATROLITE . . this newest term for Sodium Hydrosulphite . . bears the uniform and unquestionably desirable characteristics needful in the dye-house for Vat Color reduction and as a Stripping Agent.**

***Certainly!* . . You may sample VATROLITE . . without cost or obligation.**

# ROYCE CHEMICAL COMPANY

***Manufacturing Chemists***

**CARLTON HILL, NEW JERSEY**

New England Representative:

RICHARD HAWORTH, INC., 25 Fountain Street, Providence, Rhode Island

ROYCE CHEMICAL CO.

## Raleigh Discussion Report.

(Continued from page 44.)

the cork, while Mr. Lanier prefers the calfskin.

Mr. Harte reported an average life of 2.8 per cent in rolls for 55 hours which gave an average life of 38 weeks per roll, on sheepskin. It was brought out that, when a mill is curtailing, that extended shutdowns have a decided effect on the life of the rolls which are allowed to stand unless the frames are turned over every 24 hours or so.

### Do You Turn Down Spinning Whorls?

The final question discussed brought up the practicability of turning worn spinning whorls on hand driven frames down to a common size for the purpose of securing a uniform speed between spindles. One man reported that he had ground down the whorls on 10,000 spindles, with very good results, changing his constant of course to compensate for the change in spindle speed resulting from the smaller diameter whorls.

Carl R. Harris expressed it as his opinion that it is much more satisfactory to caliper the whorls that are worn and segregate those of different sizes on special frames, and make the necessary alterations on these frames, rather than attempt to have them all ground to the same size. The cost of having the whorls turned down was given as 12 cents per spindle; whereas new whorls cost approximately 60 cents each.

Mr. Harden expressed the opinion that when whorls had worn to the extent that grinding or segregating was required, that new whorls should be secured. (Readers are referred to an interesting debate on this subject, in which various details are discussed. This information appeared on page 84 of the March, 1932, issue of COTTON.—The Editor.)

This subject concluded the discussion, and after the election of officers, the meeting was adjourned. In the afternoon a number of the delegates attended the annual Textile Exposition and Style Show of the textile school of N. C. State College, held on Friday afternoon.

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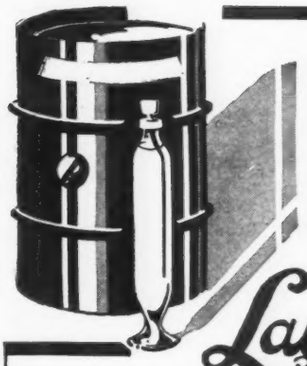
## Costs in Relation to Management.

(Continued from page 40.)

the accounts receivable at the time the goods were shipped. When the selling agent made remittance, the cash account temporarily held an amount of money for replacements. Then that cash may have been applied to reduce the bank loans or to increase the inventories. A little later, it may have been used to buy-in the company's bonds, to build an addition to the plant, or even to pay a cash dividend to the stockholders.

This industry presents a glaring example of improper treatment of the funds originally intended for replacements. Past records of plant expansion and cash dividends by misuse of the depreciation funds did attract the competition you now have. The companies that have conserved their financial strength and now can make replacements have the advantage.

YOU CAN SAVE as much as 1/3 of your Kier boiling time with Laurel Brand Soluble Pine Oils

SPECIAL formulae have been developed and proved in use to take care of cotton, Durene, and mixtures of these with other fibres.

Write for information, describing the product to be handled.

*Laurel Soluble Pine Oils, Pine-Castor Oils, for Silk, Rayon, Wool, Cotton, Celanese, Tubize, etc.*

*Laurel Soap Mfg. Company*
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WM. H. BERTOLET & SONS
2600 EAST TIOGA STREET :: :: PHILADELPHIA

Textile Treatment Specialists since 1909

Better Packing FOR TEXTILES

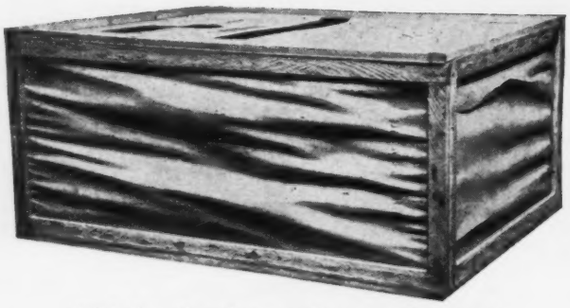
Pack your textile product in paper boxes with personality . . . styled to fit today's markets . . . printed to give your trade mark added effectiveness—in any desired combination of colors. Five strategically located Southern points to give you quick service and low freight rates. Write today to our nearest plant for samples and prices.

OLD DOMINION BOX COMPANY, INC.,
Lynchburg, Va.
Winston-Salem, N. C. Burlington, N. C. Charlotte, N. C. Ashboro, N. C.

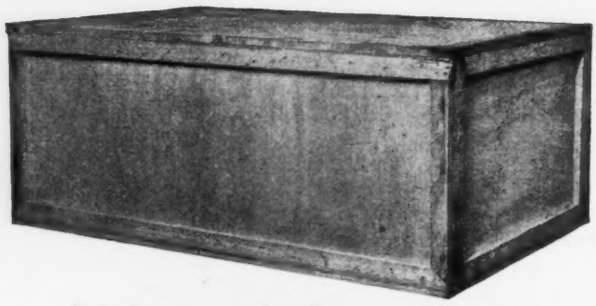
quality OLD DOMINION Paper Boxes

DOES **MOISTURE** AFFECT
YOUR **PLYWOOD BOXES** LIKE

THIS OR THIS?



This box has been under a water spray
**48 MINUTES**
It is glued with **VEGETABLE**
(non-water-resisting) glue



This box was under the *same* water spray
**48 HOURS!!!**
It is glued with **LAUXEIN**
(water-resisting) glue

A postcard will bring you the name of a plywood box manufacturer near you, who uses **LAUXEIN** glue exclusively. We believe you will find his prices no higher than those of other plywood box manufacturers.

**SPECIFY LAUXEIN GLUE ON YOUR NEXT PLYWOOD BOX ORDER**

I. F. LAUCKS, INC. BLOOMINGTON, ILLINOIS.

*"Water resistant boxes deliver the goods."*

SILK HOSIERY FINISHES

*BROSCO* DULL FINISH-FINISHING COMPOUND S. P.

*BROSCO* SCROOP OIL

**Can be used alone or in conjunction with one another to produce any desired feel and finish. Does not shrink or tighten up the fabrics.**

SCHOLLER BROTHERS, INC.
Amber & Westmoreland Streets
Philadelphia, Penna. Since 1907

SCHOLLER BROTHERS, LTD.
In Canada St. Catharines, Ontario Since 1927

**Sewing Operations**

**are done better, faster and more economically on Union Specials.**

**Union Special Machine Co.**
400 N. Franklin St., Chicago, Ill.

**Completely Removes Oil**

One important advantage of using Oakite in the dye-house is the complete removal of oil from the goods. Re-dyes are reduced to a minimum because better, more even penetration is made certain. Colors are uniform, bright and true.

Let us prove these facts. A post card to us will bring our nearby Service Man.

*Manufactured only by*
OAKITE PRODUCTS, INC., 26C Thames St., New York

**OAKITE**
*Industrial Cleaning Materials and Methods*

The others are fighting to survive and their continuance will depend eventually upon their ability to raise new funds for the necessary replacements. This situation is now in process of work-out. At present many mills are operating at a small profit before considering interest. Those with large interest charges are being carried along temporarily to protect the loans. Others may be able to meet some interest and possibly pay a little on the loans by further misuse of the depreciation funds. Thus it is that many plants are now being slowly consumed for the benefit of creditors. As long as this process can be continued, the present period of adjustment can be prolonged until modern replacements are an absolute necessity.

Management has failed in many instances to properly provide ample depreciation charges accompanied by the actual retention of sufficient funds. Until that position can be accomplished, it is desirable to avoid clouding the issue with theoretical argumentation of depreciation on replacement value. The trouble today is not so much that the depreciation charge does not go far enough, but it is directly due to the present charges not being respected by the retention of the funds necessary.

### Interest.

Another controversial issue that has been forced into your consideration of costs is the item of interest on the investment. You certainly are entitled to that interest and more, in accordance with your ability to collect and save it. While the theoretical economist may argue that interest is an element of cost, practical business does well in avoiding interest records that are internal transactions, and especially when the entries must cancel each other and will leave no change in the final net profit carried to surplus.

If you do not have any idea about what difference in profits you should expect from different fabrics in order that the resulting profits will be equally attractive, then you may like to go through the mathematics of interest on the investment. It is a substitute for the computation of a minimum desired profit.

### Financial Characteristics.

The financial characteristics of the textile industry have not received sufficient attention from the viewpoint of good management. In the elimination of labor by the purchase of highly developed mechanical equipment, a large plant investment with its continuous fixed charges has been acquired. A few years ago a composite balance sheet was printed in COTTON, August 1930, for reference purposes. More studies should be made and the important considerations placed before you. For several years the bank credit men have been making consolidated statements and have been thinking less of the collective management in this industry. You too should know how your progress compares with the trend of the industry and you, as individuals, can have the benefit of combined financial studies.

## Legalizing Trade Association Activities.

ACCORDING to recent reports legislation to legalize trade conference agreements seems to be receiving more serious consideration than are the proposals for amending the anti-trust laws directly. During the past few years quite a group of associations have conducted trade conferences in which certain codes of ethics have been worked out and certain methods of procedure have been outlined, the effects of which would in no wise jeopardize public welfare. In fact, if the members of the various trade associations would concur and follow them, good rather than evil would result.

In many instances the Federal Trade Commission has been called upon to pass upon the various codes and trade practices which have always been approved as legal if they do not overstep the limits set by the law upon actions in restraint of trade.

It is just a little difficult to look at any statement however harmless it may seem, and anticipate the extents to which it may apply. For that reason, however, the Federal Trade Commission has at several times been forced to reverse or modify itself.

It would seem, therefore, that legislation is unnecessary, and that trade practices not in conflict with the provisions of the anti-trust law are already legal, and that if any future policies desire to be worked out they will have to be made possible through some modification of the anti-trust law, the weakness of which law seems to be in its appeal to curtail combinations and inflations and unfair advancement in prices, but in times of deflation, low prices and cut-throat competition it offers little help.

This fact has been rather potently emphasized during the past two years when trade associations have made earnest, honest endeavors to improve the depressed economic situation to the general welfare of the public, the employer, and the employee, but always with the threat that its actions might be misconstrued. Therefore, there has always been a concurrent weakness in any of the plans effected.

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## Gastonia Industrial Commission to Make Industrial Survey.

A thorough study of present industrial development and factors which might influence the location of new industrial plants and distributing houses is being made for the Gastonia Industrial Commission Gastonia, N. C., in anticipation of renewed activity on the part of manufacturing concerns. Members of the commission, including some of the best known textile men of the South, believe that renewed business activity will see a further decentralization of industry. They are anticipating a continuation of the trend of industry Southward and are determined that Gastonia and the Gastonia area shall benefit from the migration, the announcement of the work states, and continues:

"In order that exact, pertinent information may be availabel to prospective industries, the commission is now preparing an industrial survey of the area. Members of the commission state that the Gastonia area, which now produces more than 80 per cent of the fine combed cotton yarn of the United States, offers unusually attractive opportunities for the manufacture of widely diversified lines, and particularly those allied in some way with the textile industry, incluring concerns using cotton, silk or rayon yarn or cloth, and those manufacturing machinery and supplies for textile plants."

# The YARN MARKET

**Philadelphia, Pa., April 16th, 1932.**

AMONG local cotton yarn interests who have canvassed their trade on the outlook for goods orders, there exists an opinion that there will be curtailment in woven goods and that there are only meager indications of betterment in the knitting group. It follows that if there shall be curtailment in consumption of yarns, their production also will be more restricted than has been the case.

Sellers of carded and combed yarns have resorted to every legitimate device for maintaining prices at a level where consuming interests might feel safe in contracting for a few months' needs. And for a time in April the course of cotton fluctuation seemed in their favor. But there were too many interests long of cotton and yarn, and these interests proved no less shy of conditions which were affecting values in the commodity markets than were the manufacturers, and soon after prices for carded had been revised to a 12½ cent basis for 10s single on cones, sales at 12 cents were reported. As April wore on it appeared as if further downward revisions might come out. As a matter of fact, the quotations given in the lists printed by textile publications merely represent the high side of asking prices, which every buyer knows is not intended to convey more than an idea of the prices he might be asked to pay.

Knitting yarns were enjoying a mild degree of interest for a time, when weavers were out of the market, and the situation appeared a trifle encouraging from the knitting group standpoint. But a single day's slipping in raw cotton brought back not only curbed buying but was followed shortly by requests for deferred deliveries against ultra conservative contracts which had been made some weeks before. These requests were regarded equivalent to cancellations, in many instances, and the trade was left with accumulations of knitting and weaving yarns that, it was believed, would hasten curtailment of production among southern spinners. That kind of support failed to materialize, and manufacturers revised their offers for spot lots of 20/s 2-ply southern warps to 14 cents, which came to be the asking price for 16s 2-ply. The trade quoted 14 cents for 20s 2-ply skeins, buyers offering 13 to 13½. The lowest figure on the board was 12 cents for southern single skeins 10s.

Price became quite indefinite as the market quiet continued, and weakness developed in both knitting and weaving numbers, the psychology of conditions in any one group carrying others down. Buyers, plainly, were in no mood to give consideration to quotations, but with each succeeding purchase of a case or two, did try to get a price a fraction under that in the previous transaction, and the time spent in shopping about was said by observers to be not warranted by the light purchases.

A manufacturer who invited bids for supplying 100,000 pounds of 12s single carded on cones was amazed for the second time within eight weeks at the low rates and as three concerns bid 12½ cents, he gave each a contract for 50,000 pounds.

It is noted in the yarn trade that underwear mills which have been keeping stocks liquid are the better supplied with orders for goods, their customers, no doubt, being given the benefit of mills' close buying of yarns. In the 150,000-pound transaction, the manufacturer bought 12s at the quotation for 10s.

Combed yarns, singles softened somewhat about the middle of April, after having remained fairly firm on a level for some weeks. In most recent transactions price has been a matter for the information of only buyer and seller. Combed peeler 2-ply are being held for a level where they should lend support to the market for mercerized, in which some briskness was reported a few weeks ago, by one or two concerns specializing in yarns, dyed and in the gray, for the hosiery trade.

Philadelphia prices published April 15th follow:

**Single Skeins**

| | | | |
|---|---|---|---|
| 4s to 8s | 11½ | 10s | 12 |
| 12s | 12½ | 14s | 13 |
| 16s | 13½ | 20s | 14½ |
| 24s | 16½ | 26s | 17½ |
| 30s | 18½ | | |

**Single Warps.**

| | | | |
|---|---|---|---|
| 10s | 12½ | 12s | 13 |
| 14s | 13½ | 16s | 14 |
| 20s | 14½ | 26s | 17½ |
| 30s | 18½ | | |

**Two-Ply Skeins.**

| | | | |
|---|---|---|---|
| 8s | 12 | 10s | 12½ |
| 12s | 13 | 14s | 13½ |
| 16s | 14 | 20s | 15 |
| 24s | 16½ | 26s | 17½ |
| 30s | 18½ | 40s | 25 |

**Two-Ply Warps.**

| | | | |
|---|---|---|---|
| 10s | 13 | 12s | 13½ |
| 14s | 14 | 16s | 14½ |
| 20s | 14½ | 24s | 16½ |
| 26s | 17½ | 30s | 18½ |
| 40s | 25 | | |

**Frame Spun Carded Yarn on Cones.**

| | | | | | |
|---|---|---|---|---|---|
| 8s | 12 | | 10s | 12½ | |
| 12s | 13 | | 14s | 13½ | |
| 16s | 14 | | 18s | 14 | |
| 20s | 14½ | | 22s | 15½ | |
| 24s | 16 | @16½ | 26s | 17 | @17½ |
| 30s | 18 | @18½ | 40s | 25 | |
| 30s dbl. carded | | | | 20 | @20½ |
| 30s tying in | | | | 17½ | |

**Carpet Yarns.**

| | | |
|---|---|---|
| 8s and 9s white warp twist | 12 | @12½ |
| 8s tinged tubes | 11 | @11½ |
| 8s part waste | 10 | @10½ |

**Two-Ply Combed Peeler Skeins and Warps.**

| | | | | | |
|---|---|---|---|---|---|
| 8s to 16s | 21 | @22 | 20s | 22 | @23 |
| 24s | 24 | @25 | 30s | 27 | @28 |
| 40s | 30 | @31 | 50s | 34 | @35 |
| 60s | 36 | @38 | 70s | 46 | @48 |
| 80s | 56 | @58 | | | |

**Single Combed Peeler Yarns on Cones.**

| | | | | | |
|---|---|---|---|---|---|
| 18s | 19½ | @20 | 24s | 22 | @22½ |
| 30s | 25 | @25½ | 36s | 26 | @26½ |
| 38s | 27½ | @28 | 40s | 28½ | @29 |
| 50s | 33½ | @34 | 60s | 36 | @38 |
| 70s | 46 | @48 | 80s | 56 | @58 |

**Mule Spun Carded Yarn on Cones.**

| | | | |
|---|---|---|---|
| 10s | 17½ | 12s | 18 |
| 14s | 18½ | 16s | 19 |
| 18s | 19½ | 20s | 20 |
| 24s | 22 | 28s | 23 |
| 30s | 24 | 40s | 32 |

**Mule Spun Combed Peeler Yarn on Cones.**

| | | | |
|---|---|---|---|
| 10s | 21½ | 12s | 22½ |
| 14s | 23½ | 16s | 24½ |
| 18s | 25 | 20s | 27½ |
| 22s | 28 | 26s | 29 |
| 28s | 30 | 30s | 30½ |
| 36s | 33½ | 38s | 35½ |
| 40s | 36½ | | |

**Tinged Insulating Yarns.**

| | | | |
|---|---|---|---|
| 8s-1 | 11½ | 8s-2 | 11½ |
| 10s-1 | 12 | 10s-2 | 12 |
| 12s-1 | 12½ | 12s-2 | 12½ |
| | | 20s-2 | 14½ |

*Its use is* **INCREASING**

**THERE are reasons for this. Formic acid is both an acid and an aldehyde; consequently, it gives some results not obtainable with other exhaust agents.**

**Also, in connection with many of the dyestuffs, it gives more brilliant shades.**

**The merits of Formic Acid are now generally known and many mills in various parts of the country are adopting its use.**

***Prompt shipment from any of our branches listed below***

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Bi-Sulphite of Soda
Carbonate of Soda
Caustic Soda, Solid and Flake
Chloride of Lime
Chloride of Zinc
Epsom Salts
Glauber's Salt
Lactic Acid
Muriatic Acid
Nitric Acid
Oxalic Acid
Phosphate of Soda
Silicate of Soda
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Sulphate of Soda, Anhydrous
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Sulphuric Acid
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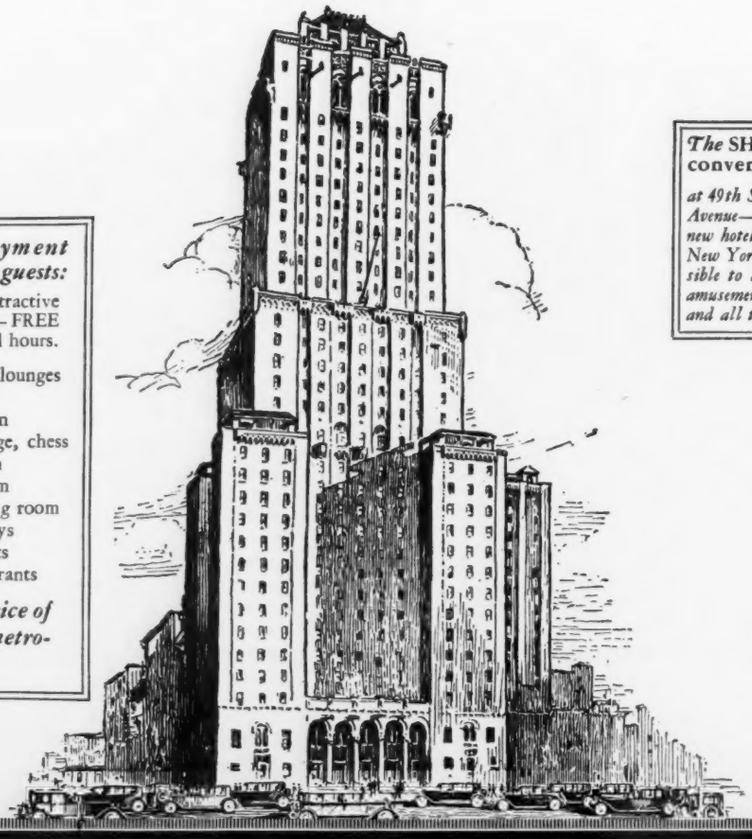
**GRASSELLI GRADE**
*A Standard Held High for 93 Years*



***For the enjoyment of* SHELTON *guests:***

A large and attractive swimming pool — FREE to all guests at all hours.

Four comfortable lounges
Solarium
Roof Garden
Game rooms—bridge, chess
Gymnasium
Billiard room
Library and reading room
Bowling alleys
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Excellent restaurants

***and every service of a first class metropolitan hotel.***

***The* SHELTON is most conveniently located**

*at 49th Street and Lexington Avenue—in the center of the new hotel district of mid-town New York, and easily accessible to all smart shops, the amusement life of the city and all transportation.*

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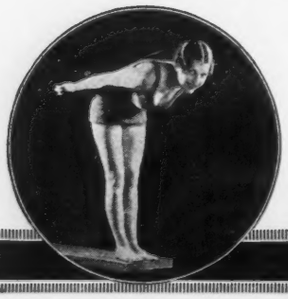
## *New York's most unusual hotel*

### An outstanding favorite among visitors to the city. Combines the attractions of a private club and metropolitan hotel

A UNIQUE, club-like atmosphere most unusual to find in a metropolitan hotel. Where visitors to the city may enjoy themselves as much as though they were guests of a large private club. Yet in spite of its many extra attractions the room charges are no higher than you have to pay in other high class hotels where the most you can expect is the ordinary "room and bath." You'll like *The* SHELTON.

*$2.50 to $3.50 a day for one person; $4.00 and $4.50 a day for two; larger accommodations always available. Special rates for those staying a month or more.*



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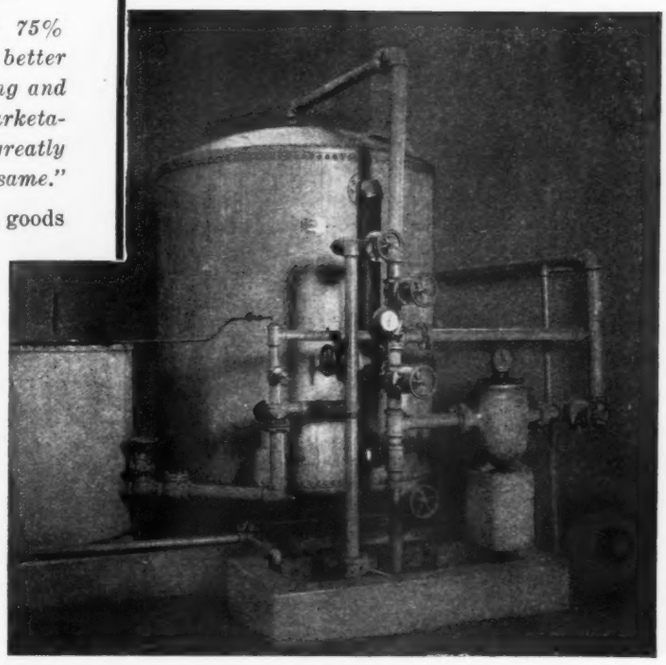
Ready for a plunge in *The* SHELTON'S famous swimming pool

*"WE installed a Permutit Water Softener in our plant in 1917. This equipment has been giving us very satisfactory service continuously from that date.*

*"We are able to save about 75% on our soap bill, and obtain much better results in bleaching, dyeing, rinsing and scouring. It has increased the marketability of our product and also greatly aided us in the manufacture of the same."*

—a large manufacturer of knit goods



**PERMUTIT EQUIPMENT** similar to this is responsible for the results quoted above.

# If you dye .. bleach .. rinse or scour

## *Here's a way to save money*

FIRST, find out what harmful impurities are in your process water. This we'll be glad to do for you—without obligation. Ask us to send you a handy sample-container, for free analysis of your mill water supply.

Then, do as scores of textile mills have done—install Permutit Equipment which removes the trouble-making elements and gives soft, pure water. Typical results of this treatment are shown in the letter quoted here, where a knit goods manufacturer tells how he has been saving money with Permutit Equipment for fourteen years!

Permutit Water Treating Equipment returns its own cost, by saving soap and chemicals, usually in less than two years. And at the same time by keeping the water supply uniformly good, quality is improved. What sounder investment can you make today?

"Reducing Textile Costs and Troubles" is the name of a booklet which will tell you all about the benefits of water treatment. Write for a copy—it's free, and will not obligate you.

THE PERMUTIT COMPANY
440 Fourth Avenue, New York, N. Y.

Manufacturers of Industrial and Household Zeolite Water Softeners—Hot and Cold Lime Soda, Lime-Barium Water Softeners —Sand Filters—Iron, Oil and Manganese Removing Filters—Continuous Boiler Blow-off Equipment—Ranarex $CO_2$ Indicators and Recorders—Other Power Plant and Water Treating Specialties.

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## Water Treating Equipment

SALES OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

*Improved Equipment and Processing in the Manufacture of*

# EAGLE STARCH

*has achieved*

1—GREATER UNIFORMITY of moisture content and fluidity of paste. While Eagle Starch always has been approved for its uniform quality, the new Eagle Starch is controlled within still narrower limits. Every package is absolutely uniform in moisture and fluidity.

2—REDUCED SEDIMENT or residue. Especially designed equipment has resulted in the elimination of practically all sediment—which means smoother, cleaner size. Try a "creaming" test.

3—ABSENCE OF SOLUBLE SUBSTANCES which have no starch value. By additional washings, soluble impurities have been removed from the new Eagle Starch.

4—CLEANSING OF THE AIR used for drying starch is an innovation. In manufacturing the new Eagle Starch, the finest particles of dust and dirt that are in the air are removed prior to using this air for drying Eagle.

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**For best results, always be sure that starch is thoroughly "creamed" by stirring with cold water before admitting steam. For further information, please write**

**CORN PRODUCTS REFINING CO.**
**17 Battery Place, New York, N. Y.**

*Value*
When YOU Go To
PHILADELPHIA

600 ROOMS AND BATHS

*A Room and a Bath For Two and a Half*

$2.50 *Single with Bath*
$4.00 *Double with Bath*

WE HAVE THEM AT
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# Why Caro-Gant is an achievement

**A natural and most effective adhesive for Warp Dressing finally yields to ingenuous and persistent research. The difficulty in the past of preparing uniform mixtures with this adhesive-colloid . . . which put its use beyond the reach of the average mill . . . . has been successfully overcome in Caro-Gant**

**Caro-Gant is 100% pure, contains no water or other inert vehicles. It is primarily the "efficiency-engineer's" sizing assistant—economical, convenient and above all most effective. Just Caro-Gant and tallow or soluble tallow —nothing more!**

**Caro-Gant in the slasher sets the *standard* for clean looms, quality cloth and weave production.**

***Send for free reprints on Gum Caroban by R. Hart; on Sulfonated Oils by Prof. A. H. Grimshaw; and other articles.***

**THE HART PRODUCTS CORP.**

***Textile Processing Specialists***

**1440 BROADWAY NEW YORK, N. Y.**

**Hart PRODUCTS BASED ON RESEARCH**

**One (1) barrel Caro-Gant replaces three (3) barrels sizing compound plus one (1) barrel tallow. Let our demonstrators prove it to you. No obligations.**

BECCO

## WHAT IS BEHIND THIS RISE TO PROMINENCE?

Since the introduction five years ago of **Becco** to the arts in the United States and Canada, the **Becco** process has risen to the front ranks of popularity. Today **Becco** concentrated hydrogen peroxide is being used with outstanding success by leading mills on **all** kinds of fabrics. Results! That's the **Becco** secret of success. **Becco** is safe and gentle-acting. It is the newer way to bleach to a full, permanent white, with a softer feel and the original wearing qualities of the goods unimpaired. Get full details. Free demonstration.

**BUFFALO ELECTRO-CHEMICAL CO.**
BUFFALO, NEW YORK

BOSTON NEW YORK PHILADELPHIA CHICAGO CHARLOTTE
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TEXTOLITE DETERGENT

*TURNING THE WHEELS OF PROGRESS*

NEUTRALITE DETERGENT

## TEXTOLITE DETERGENT in Kier Boiling

IN TWO minutes a Tornado will uproot trees and raze buildings to the ground and yet the same amount of wind and pressure can pass over the same area in six hours of time causing no damage.

THE same principle is involved in Kier Boiling with Caustic Soda alone and with the addition of TEXTOLITE in the Kier solution.

THE action of Caustic Soda is *instant* and 100%. TEXTOLITE is strongly "buffered" and hence only mildly but persistently caustic. It extends its buffer effect over the entire solution slowing down its caustic activity and with a sustained pH value. Thus you get better elimination with less danger of burns, stains or damage from the more insidious, pernicious and progressive tendering in the lapse of time between the *making* and *using* of the fabric.

**Detergent Products Corporation**

**Mortgage Guarantee Building**
**ATLANTA, GEORGIA**

CLEANING IACO COMPOUND

"THE PROOF OF THE PUDDING IS *ALWAYS* IN THE EATING."

TRISODIUM PHOSPHATE

# BOSSON & LANE

*Manufacturing Chemists*
*Established Jan. 1, 1895*
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## High Grade Castor Oil Products

*Sulphonated-Saponified*

**Soluble Oil** **Para Soap Oil**
**Turkey Red Oil** **Castor Soap Oil**
**Soluble Pine Oil** **B & L Bleaching Oil**

**PENTRALYN,** a superior assistant for Beam, Spool, Bobbin and Package Dyeing.

**Bleach Softener CSO, Finishing Sizings and Softeners.**

**VICTROLYN,** the economical assistant in warp sizing. Penetrating, Lubricating and wholly efficient.

**B & L Bleachers' Bluings and Violet Tints**

***GOOD MONEY VALUES-FREEDOM FROM WORRY***

# VICTOR MILL STARCH

## The Weaver's Friend

It boils thin—it penetrates the warp—increases breaking strength and carries the weight into the cloth. Being thoroughly washed free of gluten and other foreign matter it gives a bleach and finish to the goods that you can get from no other starch.

A trial order will convince you that VICTOR STARCH has no equal on the market.

**THE KEEVER STARCH COMPANY, Columbus, Ohio**

**Southern Agent: MR. DANIEL H. WALLACE, Greenville, S. C.**

**If you are not already using VICTOR STARCH call on our representative for a demonstration at your convenience.**

# SOLVAY

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SOLVAY products are sold on the basis of *actual* Alkali content.

SOLVAY 58% Soda Ash *contains* 58% of *actual* sodium oxide.

SOLVAY 76% caustic Soda *contains* 76% *actual* sodium oxide.

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# REDUCE THE SODA

## AND GET A SOFTER BOIL

Use **KAY**—**Kay** has slight bleaching action and if any starch is present on warps it makes the starch soluble and easily washed out.

## KALPINOL

### (Sulphonated Pine Oil)

for boiling out in kier before bleaching. Removes natural oil and waxes from cotton. Reduces capillary action and allows alkalies to penetrate and give good even boil which assures quicker and more uniform bleaching. Opens up the fibres to receive bleach liquor. Try it.

**FREE** *Have you received your copy of "Popular Industrial Chemistry" by James A. Branegan, Pres. Kali Mfg. Co.? Sent free on request.*

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# Better size in the slashing room *Increased weave-room production*

In an effort to determine how much his weave-room production was being affected by the warp conditioner, the boss weaver in a 400-loom Southern cotton mill recently tested Houghton's Warp Conditioner against two other brands.

The results were conclusive; for Houghton's Warp Conditioner added a substantially larger percentage of total size to the warp, which, of course, gave a greater weekly poundage of woven cloth. Furthermore, 40% less of Houghton's Warp Conditioner was needed, so that the sizing compound made with it was, respectively, 62½ cents and 50 cents per kettle cheaper than the compounds made with the other two brands.

Houghton's Warp Conditioner also showed a low moisture content; a high total fat content; gave the warp a uniformly high tensile strength; resulted in less warp breakage and steadier production.

The nearest Houghton Man will be glad to specify the Houghton Warp Conditioner that may help you to increase your weave-room production at a lower cost.

*Houghton's*

# WARP CONDITIONER

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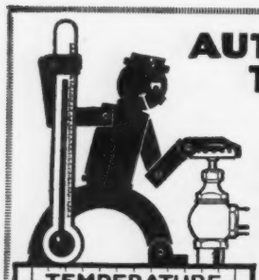


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## TEXTILE OILS, SOFTENERS and FINISHES

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*American Dyestuff Manufacturers*
*Established 1876*
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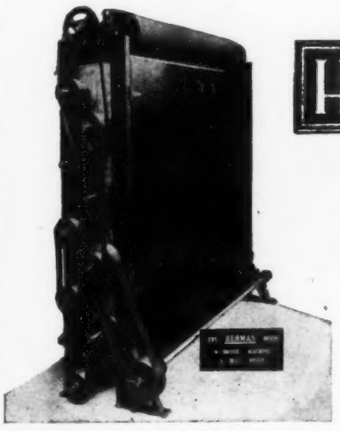

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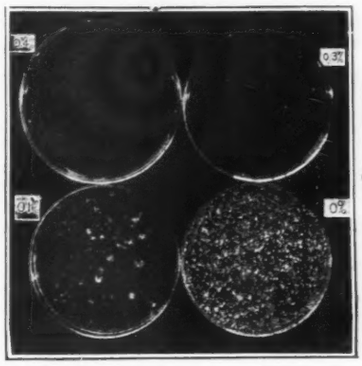

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MORE THAN 1400
HYGROLIT
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*Hygrolit means—*

Adding weight to your yarns.

Protection against mildew.

Saving bobbins

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Increasing breaking strength.

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Please send some of your yarn which we will Hygrolit for you without charge. It will please you.

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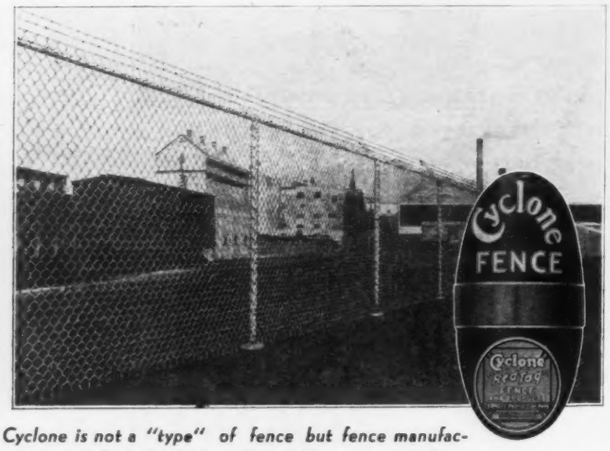
YARN CONDITIONING
MACHINE *and* LIQUIDS

# WHY A CYCLONE FENCE?




*Cyclone is not a "type" of fence but fence manufactured exclusively by Cyclone Fence Company and identified by this trademark.*

***because*** Cyclone assures and guarantees satisfaction. A guarantee that only could be backed up by a product made in the best possible way with the best possible materials. Cyclone Fence gives many additional years of service because it is made of copper-steel, heavily galvanized, and erected on H-column posts, set in concrete foundations—

***because*** Cyclone Fence—is erected by crews trained in Cyclone factories. Not a chance of a slip-up in the work! Not a chance for poor execution! And you are freed from the bother and care of hiring men or superintending work.

***because*** —despite being a better product, backed by better service—Cyclone Fence costs you no more. . . . No matter how large or small your requirements, no matter how "different" they are—we would like to render you the same service that has pleased so many others. Write for booklet.

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STANDARD FENCE CO., OAKLAND, CALIF.

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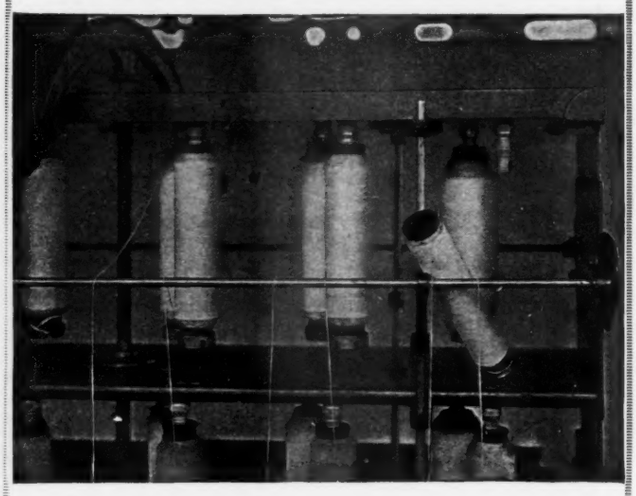


# Eclipse Ball Bearing Bobbin Holder with Long Draft System

**The Eclipse Ball Bearing Bobbin Holder used in connection with Long Draft system of Spinning has some very distinct and desirable advantages over wooden skewers.**

**Due to the Eclipse Ball Bearing Bobbin Holder's construction, the largest possible package of roving with a minimum of twist can be used without *stretching* the roving.**

## —WHY—

**A package (large) of roving will be rotating on Ball Bearings, hence greatly reduced friction when being pulled from bobbin; also due to the construction of the Eclipse Ball Bearing Bobbin Holder, a package (large) of roving will automatically rotate without WABBLING—consequently, this means greatly reduced *stretching* of the roving.**

We will be pleased to have our representative call and tell you all about the Eclipse Ball Bearing Bobbin Holder. Write us—

ECLIPSE

**ECLIPSE TEXTILE DEVICES, INC.**
**Elmira, N. Y.**

# ECLIPSE
## BOBBIN HOLDER

# LOOK FOR THESE SIGNS OF SUCCESS!

They show what many interests are doing to promote bigger business in cottons on a National scale.

. . . More than 20,000 retail stores, specialty shops, chain organizations, and independent wholesalers and retailers from coast to coast will take active part in National Cotton Week.

. . . Department stores will use millions of lines of space in newspapers to advertise cotton news.

. . . Prominent radio programs and broadcasters will call attention to Cotton.

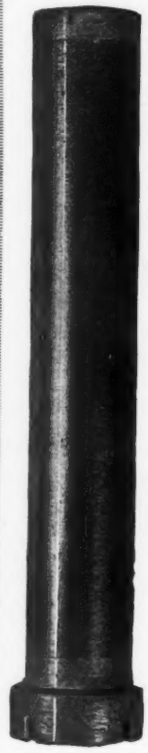
. . . Magazines, newspapers, banks, utility and traction companies are giving wide-spread publicity.

. . . Railroads (the Pennsylvania, Illinois Central, Southern, Missouri, Kansas & Texas lines) are printing their menus on cotton fabric or including the National Cotton Week poster in their time-tables.

. . . Chambers of Commerce and civic organizations in the cotton-growing and manufacturing centers are planning special civic celebrations.

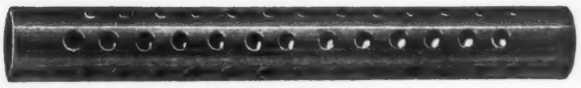
ALL THESE and many more signs point to success for National Cotton Week—the beginning of the big Cotton Promotion of 1932!

THE COTTON-TEXTILE INSTITUTE, INC., 320 Broadway, New York City



# ADOLFF BOBBINS

## SPOOLS, QUILLS TUBES



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Properly metal protected. Do not warp or splinter.
Easily cleaned. Long life.

ADOLFF BOBBIN COMPANY

Sole Representative: G. BAUSCH

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A great deal depends on whether or not you keep the machines properly serviced. Repair parts should be selected with care as to their quality and precision. That is why you should always consult Henderson. Here you will find the utmost in efficiency built into each part—spiral, bevel and spur gears, loom parts, beam heads, etc.

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Grinders reconditioned promptly and thoroughly, truing them within the closest tolerances.

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**Established 1868**

**Worcester, Mass.**

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LEADERSHIP
MAINTAINED

EACH month brings wider acceptance and sustained enthusiasm for the Centrif-Air Adjustable Cotton Cleaning System. Made by the pioneers in this type of cleaning system, the Centrif-Air remains head and shoulders above its imitators and competitors in efficiency, economy and convenience.

The Centrif-Air makes three distinct separations with the combined use of mechanical and centrifugal force, air and gravity. It assures 50% better results than you can obtain by any other method. Write for information.

THE CENTRIF-AIR MACHINE CO., INC.,
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**CENTRIF-AIR**
ADJUSTABLE COTTON CLEANING SYSTEM

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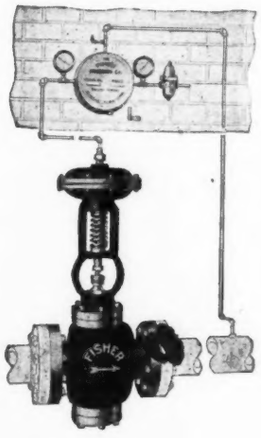


Our Special Bulletin 70 will be gladly sent you on request

**Fisher Governor Co. Inc.,**

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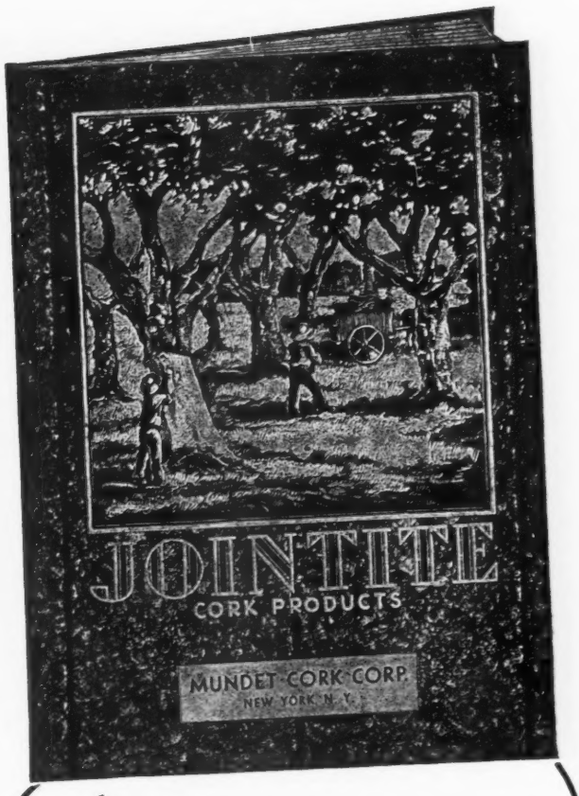

## This catalog tells how to properly insulate any roof and any cold surface. It tells how to isolate machinery.

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**TAXICAB**

*Taxicab* is an abbreviation of *taximeter-cabriolet*—a vehicle carrying an instrument for automatically registering the fare. The name *cabriolet* is the diminutive of the French *cabriole*, meaning "a leap" like that of a goat, and was applied to this type of carriage because of its light, bounding motion. *Cabriole* came from the Italian *capriola* meaning "a somersault," from Latin *caper* "a he-goat," *capra* "a she-goat." There are thousands of such stories about the origins of English words in

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*"The Supreme Authority"*

Write for Free Booklet, which suggests how you may obtain a command of English through the knowledge of word origins.

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By young married man, college graduate, with 8 years experience in textile office work; in addition have a thorough knowledge of modern textile cost accounting. Reply AZ, care COTTON, Grant Bldg., Atlanta, Ga.

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Advertising in this section produces results at small cost. Note the rates at the top of this page and tell us what you wish to advertise.

**COTTON**

**GRANT BLDG. ATLANTA, GA.**

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McCord's clients are appreciative of the "pooled efforts of many minds"—each one of which contributes in some capacity, to the final satisfactory result of each undertaking. Write nearest office.

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**Back to Boiler**
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Handles water of condensation at all temperatures—212° and above—the higher the better—*without atmospheric vent.*

**MOREHEAD MANUFACTURING CO.**
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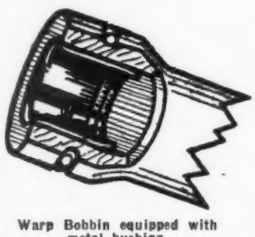

Warp Bobbin equipped with metal bushing.

**Keeping Bobbins Same Height on Spindles**

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*Metal Stampings* The Shield of Protection *Screw Machine Products*
GROTON ST., Lawrence, Mass.
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Sou. Rep.
**Southern Shippers Supply Co.**
113 COURTLAND ST., S. E., ATLANTA GA.

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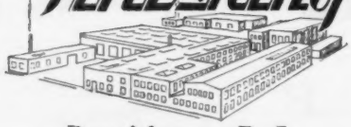

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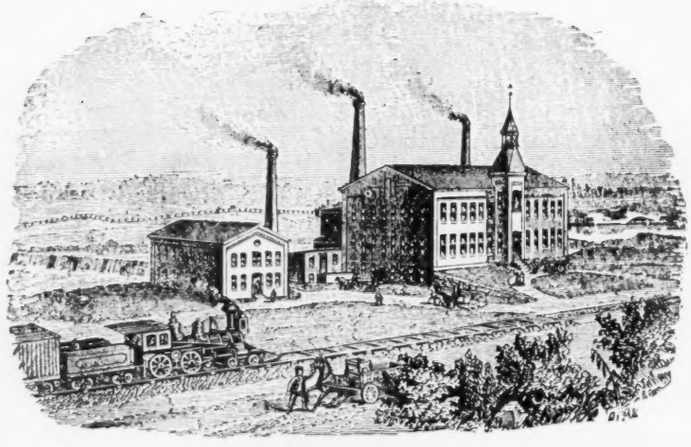

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